

A RESOURCE GUIDE FOR MAKING INFRASTRUCTURE WORK FOR THE MOST MARGINALISED



MALKI RODRIGO

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LITERATURE REVIEW

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A Resource Guide for Making Infrastructure Work for the Most Marginalised

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**A Resource Guide for Making Infrastructure Work for
the Most Marginalised**

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Introduction to the guide

This guide is a general description that provides insights into research done on marginalised communities and their service provision in different contexts within Sri Lanka and globally. It includes articles on the five major infrastructure grids: water, sanitation, energy, transport, and communication concerning poor inhabitants in a city. The guide is a mix of articles that explain the subject through various perspectives and circumstances of residents, communities, and other related stakeholders. It captures the range of situations from complete exclusion from all services to full inclusion in all major grids.

The guide begins with generalised topics on infrastructure services and off-grid settlements and then focuses more on case study-based articles on each infrastructure service and underserved community responses. It then extends to housing and underserved communities, housing policy and governance, evictability and tenure security, and ends with journal articles on the System of Provision (SoP) approach and its applications. This guide is a compilation of journal articles, books, and project reports.

Method

The academic research guide is mainly sourced from Google Scholar, ResearchGate, and Science Direct repositories. This database was interrogated using a set of pre-selected keywords: Housing (Slums, Shanties), Tenure security, Evictability, Low-income households (marginalized, underserved), Management of cities (governance, administration, resettlement, relocation) in cross-reference with different infrastructure services (Water, Sanitation, Electricity, Transportation, and Communication). When selecting journals, Scopus Indexed Journals having a higher citation count were considered; however, articles best suited with keywords were given more priority in selection. The articles presented here have been formatted in a way where the most contemporary identified in each of the stated areas are found at the beginning of each topic; however, it is possible that searches may not have returned all relevant examples, and this guide can be viewed as a live document that can be added to.

This database is categorized into three main themes according to the key areas of the project:

- 1) Off-Grid Settlements
- 2) Evictability and Tenure Security
- 3) Systems of Provision (SoP) Approach

It is also noteworthy that priority has been given to papers based on the Sri Lankan context as a case study.

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1) Off-Grid Settlements

1.1 Off-Grid Settlements, Housing, and Infrastructure Services

[The World Bank. \(2021\). Economic benefits from more reliable and resilient infrastructure.](#)

The report frames the World Bank's contribution to the G20's Policy Agenda under Italy's presidency on Infrastructure Maintenance and draws on several recent World Bank reports, including Beyond the Gap and Lifelines. Building on the World Bank's operational and analytical work, this report offers evidence that inadequate or deferred maintenance of infrastructure assets have costs and repercussions that affect the growth and well-being of people, firms, and economic systems as a whole. Regular maintenance is an essential contributor to infrastructure resilience. Furthermore, it highlights that more spending alone is not sufficient, unless it is accompanied by new approaches in planning, costing, and delivering maintenance, operations, and repairs. In doing so, the report draws lessons from private participation in infrastructure. Lastly, the report identifies synergies and trade-offs that come to play when pursuing infrastructure maintenance as the global economies enter the post-COVID recovery phase.

[Anon. \(2021\). Upgrading informal settlements in the global South: transforming relations with government, transforming lives. International Institute for Environment and Development. <https://www.iied.org/upgrading-informal-settlements-global-south-transforming-relations-government-transforming-lives>](#)

Upgrading, if done well, transforms housing, living conditions, and lives. But successful upgrading usually includes (and depends on) much better relations between the residents of informal settlements and local government. Upgrading needs to include all local government departments to avoid conflicts of interest, such as an infrastructure division intent on clearing informal settlements for road expansion as the planning department is developing upgrading programmes. These changed relationships can provide the foundation from which other needs can be addressed.

[Korala, A. \(2021\). Included to be excluded? A critical assessment on the inclusion of slum and shanty dwellers into the Urban Regeneration Project. *University of Colombo Review*, 2\(2\).](#)

Sustainable Development has become a popular concept in recent development discourse. With the sustainable development goals adopted in 2015, all countries have acted to fulfil the goals by its target deadlines. Goal No. 11 "Make cities and human settlements inclusive, safe, resilient, and sustainable" has become one of the most important sustainable development goals as cities are proponents of a country's development. Due to the highly diverse nature of urban populations, inclusion has become an important concept under this goal. Nevertheless, there are many examples around the world which suggest that vulnerable groups like slum and shanty dwellers have been excluded from the decision-making process of the development of cities. In such a context, this article asks, to what extent were the slum and shanty dwellers in the city of Colombo included in the decision-making process of the development projects related to building a sustainable city? It uses as a case study, the Urban Regeneration Project, initiated by the Urban Development Authority (UDA) and aimed at upgrading the living conditions of slum and shanty dwellers by relocating them in modern high-rise buildings. The article is based on secondary data gathered through journal articles, books, websites, etc. It argues that the slum and shanty dwellers were excluded from the entire decision-making process, and that the government justified its action adopting a positivist stance when making policy decisions.

[Ramanayake, R.M.D.T. and Abeynayake, C. \(2021\) "A comparative study of critical success criteria on sustainable housing; a case of - low income housing, Sri Lanka," 14th International Research Conference - FARU 2021 \[Preprint\]. Available at: https://doi.org/10.31705/faru.2021.1.](https://doi.org/10.31705/faru.2021.1)

Sustainable housing is a popular topic with regard to the sustainable development goals (SDGs), sustainable communities, and sustainable cities. Although different research studies have come up with different Critical Success Criteria (CSC) for specific contexts, there are very limited studies on CSC on sustainable low-income housing. This research aims to compare the CSC on sustainable low-income housing in the designing stage in the Sri Lankan context. Eighteen CSCs were derived from a comprehensive literature review, re-examined by 27 professionals, and ranked by the community in three locations. The Relative Importance Index (RII), Min-Max Normalization, and Gap Analyses were employed in the ranking process of CSC. The highest importance has been ranked as efficient use of water and energy, user's satisfaction and quality of housing while least importance is ranked with maintainability, public consultation and community participation and catering for the Disabled by the literature, experts and the community respectively. The findings of the research would support the designers, architects, and planners specialized in the field to ensure the successful delivery of sustainable housing.

[Collyer, M., Mitlin, D., Wilson, R., & Shahaduz, Z. \(2021\). Covid-19: Community resilience in urban informal settlements, Covid Collective Research for Policy and Practice 1, Brighton: Institute of Development Studies, DOI: 10.19088/CC.2021.001](https://doi.org/10.19088/CC.2021.001)

Health outcomes of the COVID-19 pandemic and the economic impacts of the resulting lockdowns have not been evenly distributed and inequalities have deepened. As the pandemic began, there were widespread concerns for the urban poor. Population density and limited service provision in informal neighbourhoods meant that standard measures to reduce transmission were difficult or impossible. Livelihoods based on day labour and the unskilled service economy were also most seriously affected by the resulting lockdowns.

[World Bank. \(2020\). Infrastructure in Asia and the Pacific: Road transport, electricity, and water and sanitation services in East Asia, South Asia, and the Pacific Islands. Washington, DC: World Bank. doi: 10.1596/34228.](https://doi.org/10.1596/34228)

Infrastructure assets and services provide the basic physical and organizational structures that underpin the functioning of the economy and society. Access to reliable, quality, efficient, and affordable infrastructure services is critical to reducing poverty, promoting economic growth, supporting social development, and building resilient communities. Much of the global population lacks access to basic physical infrastructure, including roads, piped water supply, improved sanitation, and electricity. Moreover, services may be unreliable, of poor quality, inefficiently supplied, or unaffordable. These conditions impose constraints on human health, quality of life, education, and employment, particularly in rural areas of the global south. This report provides an overview of infrastructure provision in three key economic sectors – road transport, electricity, and water and sanitation – as an initial step towards building a more extensive body of knowledge on the health of infrastructure provision worldwide. Geographically, this report focuses on two of the world's fastest-growing regions, East Asia and Pacific (EAP) and South Asia (SAR), which also account for approximately 35.8% of the world's extreme poor. The report takes stock of available data on service coverage, quality, and tariff and cost levels that can help governments and their development partners establish key needs, target resources for strategic priorities, and benchmark infrastructure performance.

Perera, Iromi. (2020). "We Can't Feel the Earth beneath Our Feet Anymore": Dispossession and high-rise living in Colombo. SSA Sri Lanka, pp. 51-58. <http://ssalanka.org/cant-feel-earth-beneath-feet-anymore-dispossession-high-rise-living-colombo-iromi-perera-pp-51-58/>.

The title of this paper, "We can't feel the earth beneath our feet anymore" was a statement made by a woman when interviewed by the author in one of the older 400 sq.ft. high rise apartments in Colombo. It captures the spatial injustice and disconnect with the built environment experienced by the working-class poor of Colombo. The idea of a "world-class city" is equally appealing to them as it promises a different life that is perhaps more aligned with changing aspirations, particularly of young people. Their identity is intrinsically linked to the land they occupy and development policies therefore must have spatial justice at the heart of all planning processes. This requires not only a change in mind-set but also in procedure: whether it be master plans or land acquisition, a multi-disciplinary and consultative processes must take place, and it cannot be tokenistic or cosmetic. People mostly say that they are open to sacrifices in the name of development as long as they are treated fairly.

[Maqsood, A., Spencer, J., Abeyasekera, A., Perera, I., & Sajjad, F. \(2019\). Discipline in Sri Lanka, punish in Pakistan: Neoliberalism, governance and housing compared. *Journal of the British Academy*, 7\(S2\), 215-244.](#)

In discussions of urban infrastructure and land, neoliberalism is often presented as a hegemonic economic model with seemingly identical outcomes across a range of historical and political circumstances. For instance, in large cities of the Global South, a combination of speculative capitalism, and increased privatisation in the provision of public services, has been blamed for structural dispossession and the pushing out of working-class and vulnerable groups from urban centres. However, little has been said about how these processes interact with more contextual specificities – longer histories of state provision, existing inequalities, local political dynamics, and legislative structures. Through comparative work on urban infrastructure projects in Lahore and Colombo, this article tells a story in which historical differences in state policy on housing and governance have impacted the ways in which dispossession is meted out, experienced, and contested. Contributing to calls for studies of "actually existing neoliberalism" (Wacquant, 2012), it illustrates the importance of closely examining the relationship between neoliberal policies and dispossession on the ground through a historical perspective.

[Dharmadasaa, R.A.P.I.S. & Hewavitharanaa, M.K. \(2018\). Income diversification of tea estates households in Badulla district.](#)

The poverty-prevailing estate sector is of great importance to the Sri Lankan economy and it should be a source of learning to other sectors in Sri Lanka. Estate poverty could generally be reduced by diversifying the income portfolio of estate households. Although poverty is a major determinant of income diversification, it is very important to study the household level determinants of income diversification. By taking representative sample of 298 households using the cluster sampling technique, this study attempts to find household-level determinants of income diversification of tea estate households in the Badulla district of Sri Lanka. The data for the study comes from a primary survey carried out in five tea estates. The Tobit Model was used to find the determinants. Moreover, the Shannon Equitability Index was used to measure the overall diversity, while a Tobit Model was estimated to find the determinants of overall diversity. This study finds that tea estate households in the Badulla district are mainly involved in three broad income generating activities. Those are estate income, other agricultural income, and non-agricultural income. Of the estate households, 72.48% generate their income from non-agricultural activities. It is the highest income activity among the major income activities. Of the households, 71.47% and 23.82% generate their income by estate

labour and other agricultural activities respectively. The study concludes that the overall diversity of income is very low in the estate households and the education level of the household heads plays a major role in diversifying into non-agricultural activities. The working-age population is the main determinant to diversify income into non-agricultural activities other than estate income.

[Kanchana, R. A. C. \(2017\). The impact of infrastructure development on urban poverty reduction. In proceedings of the International Postgraduate Research Conference 2017 \(IPRC–2017\), Faculty of Graduate Studies, University of Kelaniya, Sri Lanka.](#)

Poverty is a multidimensional phenomenon and it is clear that there are aspects of poverty which go beyond the conventional measures of monetary income. Urban poverty has gained acceptance as a major issue that warrants a holistic approach, which includes both physical and social infrastructure. Infrastructure can broadly be defined as long-term physical assets that operate in markets with high barriers to entry and enable the provision of goods and services and as a key element of poverty alleviation. Social Infrastructure is a subset of the infrastructure sector and typically includes assets that accommodate social services. The improvement in infrastructure facilities over the years is one of the key milestones in improving the wellbeing of residents. It has been significant that the responsible authorities have increasingly focused on improving the quality of life of the urban poor through infrastructure development. The main objective of the research, which is both qualitative and quantitative, is to explore the impact of infrastructure development on urban poverty reduction. The Dematagoda Grama Niladhari Division of the Thimbirigasyaya divisional secretariat in Colombo district was selected as the study area. Both primary and secondary data were collected for the study, which reveals, unequivocally, that infrastructure development leads to poverty reduction.

[Chathurani, W. S. D., & Ariyawansa, R. G. \(2017\). A study on householder's satisfaction on low-income high-rise housing in Colombo City.](#)

Householder satisfaction is not only an important component of an individual's quality of life, but also determines the way people respond to the residential environment. The aim of this study is to evaluate householder satisfaction in low-income high-rise housing in Colombo city with special reference to the case of the Lakmuthu Sevana Housing Scheme. With the help of available literature, factors such as "physical features of the housing," "quality of services within the housing unit," "public facilities," and the "social environment" within the housing area and their contributions to residents' overall housing satisfaction were recognized as four main variables to measure the satisfaction of the householders. For the primary data, a questionnaire survey was conducted among 100 householders chosen randomly in the Lakmuthu Sevana housing scheme. Using elementary statistics, data were analyzed descriptively. The study specifically attempts to identify key factors that affect householder satisfaction. This was achieved through householder points of view. The analysis determines that householders were satisfied with physical features, service quality, public facilities, and the social environment of the housing scheme they reside in. They were, however, experiencing some problems with building maintenance, garbage, and noise pollution in the area. In other words, these are the facts on which severe dissatisfaction was rising among the residence.

[Annamalai, T. R., Devkar, G., Mahalingam, A., Benjamin, S., Rajan, S. C., & Deep, A. \(2016\). What is the evidence on top-down and bottom-up approaches in improving access to water, sanitation and electricity services in low-income or informal settlements. Social Science Research Unit, UCL Institute of Education, University College London.](#)

This systematic review of urban planning studies in developing countries found that top-down efforts are ineffective for connecting populations to centralised water, sanitation, or electricity services.

Bottom-up participatory approaches are effective for local sanitation solutions, but not for water supply or connectivity to other services. Services provided by public or private agencies through centralised planning and implementation (top-down) appeared effective in individual studies for connecting populations to water, sanitation, and electricity. However, where studies were sufficiently similar to justify pooling findings in a statistical meta-analysis, this conclusion was not confirmed. Qualitative synthesis of contextual factors suggests a need for the customisation of solutions to meet local needs, and better delivery of services by alternative/non-government service providers. Participatory (bottom-up) approaches adopted by NGOs and CBOs suit the construction and maintenance of toilets, which can be standalone, and statistical meta-analysis confirms their effectiveness for individual but not community toilets. Although studies of bottom-up approaches to improving water access appeared positive more often than studies of top-down approaches, this difference was not statistically significant in a meta-analysis. Moreover, bottom-up approaches suffer from problems of scaling-up. Replication of successful models may not always be possible, since the same conditions may not be present in different locations. Neighbourhoods without security of tenure are rarely served well top-down. Bottom-up approaches are also limited in this context, and also in Africa where efforts may be hampered by particularly modest levels of economic development. Public-private partnerships show promise for top-down approaches to improving water supply. Bottom-up, NGO-led initiatives for improving water supply need the cooperation and support of the public sector.

[Philbrightly. \(2016\). A Profile of Underserved Settlements in Colombo. Geosrilanka.](#)

When it comes to developing world cities, Colombo is one example of a city that does not fit the usual text book models – no massive sprawling slums on the periphery of the city, no rampant migration to the city, and very few houses which could be classed as extremely poor. So, terms like “squatter settlement” and “shanty” don’t really apply to Colombo. A better term for low-income settlements might be Underserved Settlements or USS; and underserved is a term that is generally applied to the houses of the urban poor. Text book examples are helpful up to a point, but what students get are generalisations. What students need are hard facts from real examples, whilst understanding that what they see is the result of a set of circumstances which in some ways is unique to a particular country. This is the first of two short articles looking at the situation of the urban poor in Colombo Sri Lanka. Most of the information is taken from a report by the NGO SEVANATHA.

[Parikh, P., Fu, K., Parikh, H., McRobie, A., & George, G. \(2015\). Infrastructure provision, gender, and poverty in Indian slums. *World Development*, 66, 468-486.](#)

The relationship between infrastructure provision and poverty alleviation is examined by analysing 500 interviews conducted in serviced and non-serviced slums in India. Using a mixed-method approach of qualitative analysis and regression modelling, it was found that infrastructure was associated with a 66% increase in education among females. Service provision increased literacy by 62%, enhanced income by 36%, and reduced health costs by 26%. Evidence suggests that a gender-sensitive consideration of infrastructure is necessary and that a “one-size-fits-all” approach will not suffice. The paper provides evidence that infrastructure investment is critical for the well-being of slum dwellers and women in particular.

[Samaratunga, T. C., & O'Hare, D. \(2014\). “Sahasapura”: the first high-rise housing project for low-income people in Colombo, Sri Lanka. *Australian Planner*, 51\(3\), 223-231.](#)

Sahasapura, the first high-rise low-income housing project in Sri Lanka, was completed in 2001, and the project was a new experience both for low-income people and for housing professionals in the country. Consisting of 671 housing units over 14 floors, the construction of Sahaspura was not just a

housing project, it was also an outcome of city development under the Sustainable Township Development Programme (STP). The mission of STP was to help Sri Lanka meet the shelter requirements of the urban poor by creating socially acceptable, economically viable, and environmentally friendly housing and urban and spatial developments to ensure sustainable living in Colombo. The Sahaspura high-rise low-income housing project was the pilot project under the STP, and this paper discusses to what extent Sahaspura has achieved the STP mission of ensuring sustainable living, 12 years after its construction.

[Parikh, P., Parikh, H., & McRobie, A. \(2013\). The role of infrastructure in improving human settlements. Proceedings of the Institution of Civil Engineers – Urban Design and Planning, 166\(2\), 101-118.](#)

This paper considers how the provision of integrated household-level infrastructure – particularly water and environmental sanitation (including water supply, sewerage, roads, storm drainage, and solid waste management) – can play a leading role in improving the conditions in slum settlements. Around 700 socio-economic interviews were carried out in India and South Africa to investigate an innovative approach called slum networking, which sees the strong correlation between slum locations and drainage paths as an opportunity for improving the wider urban environment. This recognition allows resources to be mobilised locally, thereby removing the need for external aid funding. The evidence from the 700 families shows that communities perceive water and sanitation inputs to be their top priority and are willing to contribute to the costs. If slum upgrading is led with access to integrated water and environmental sanitation at household level with community contributions to the cost of infrastructure, then slum communities subsequently invest considerably greater sums in improved housing and education, with longer term contributions to poverty alleviation, improvements in health and literacy and an increase in disposable incomes.

[Andrés, L., Biller, D., & Herrera Dappe, M. \(2013\). Reducing poverty by closing South Asia's infrastructure gap.](#)

Despite recent rapid growth and poverty reduction, the South Asia Region (SAR) continues to suffer from a combination of insufficient economic growth, slow urbanization, and huge infrastructure gaps that together could jeopardize future progress. It is also home to the largest pool of individuals living under the poverty line in any region, coupled with some of the fastest demographic growth rates of any region. Between 1990 and 2010, the number of people living on less than US\$ 1.25 a day in South Asia decreased by only 18 percent, while the population grew by 42 percent. If South Asia hopes to meet its development goals and not risk slowing down, or even halting, growth and poverty alleviation, it is essential to make closing its huge infrastructure gap a priority. But the challenges on this front are monumental. Many people living in SAR remains unconnected to a reliable electrical grid, a safe water supply, sanitary sewerage disposal, and sound roads and transportation networks. This region requires significant infrastructure investment (roads, rails, power, water supply, sanitation, and telecommunications) not only to ensure basic service delivery and enhance the quality of life of its growing population, but also to avoid a possible binding constraint on economic growth owing to the substantial infrastructure gap.

[Samaratunga, T. & O'Hare, D. \(2013\). High density high rise vertical living for low-income people in Colombo, Sri Lanka: Learning from Pruitt-Igoe. *Architecture Research*, 2\(6\).](#)

The Colombo Master Plan (2008) reveals that there are 66,000 households within the City of Colombo living in squalid slums and shanties unfit for human habitation. They represent 51 per cent of the total city population and live in 1,506 pockets of human concentration identified as Under-Served Settlements (USS) encumbering on state-owned lands with no title. About 390 hectares of valuable prime lands in the city have succumbed to the encroachment process during the past five decades. Moreover, they have engulfed all the environmentally sensitive low-lying areas, canal banks, and flood retention areas as well as roads, railway reservations, and other open spaces. Since gaining independence in 1948, the Sri Lankan government has devoted much attention to finding a solution for this situation and has successively introduced policies, programmes, and projects to overcome poor housing in Colombo. However, most of these programmes have proven to be only temporary fixes, and have not made any significant long-term impact to the housing sector overall. This research paper discusses the Sri Lankan government's policy move towards high-rise high-density low-income public housing as an appropriate solution for slums and shanties in Colombo City. It is noted that high-rise housing is not a universally accepted solution for housing for low-income people and some countries have totally rejected high-rise buildings for low-income housing due to significant failures in the past. At the same time, some other countries claim success in high-rise housing for low-income people including uplifting low-income people to a middle-income status through high-rise housing. As such, high-rise low-income housing remains a controversial topic in many developed and developing countries. This paper revisits the literature on Pruitt-Igoe in order to identify lessons that may assist Sri Lankan authorities to avoid similar failures.

[Dharmadasa, R. A. P. I. S. & De Zoysa, M. \(2012\). The determinants of labour outmigration in the tea plantation sector in Badulla District. In proceedings of the International Conference on Business Management on Capacity Development in a Post-war Context \(pp. 1-8\).](#)

This study is an attempt to find out the determinants of labour outmigration from the tea plantation sector in the Badulla district. A simple random sample of 378 households was drawn from the total worker population of the selected tea estates. The data were gathered using a pre-tested questionnaire and a logistic regression model was estimated to find the determinants of migration. Results suggest that the experience of the household head in tea estate work, family size, total income from tea, number of dependents in a family, and race affect the migration decision negatively. Hence higher the non-farm income, the higher will be the propensity to migrate as indicated by the positive coefficient of the non-farm income variable.

[Dayaratne, R. \(2010\). Creating sustainable habitats for the urban Poor: Redesigning slums into condominium high-rises in Colombo. *Built environment: Design, management and applications*. New York: Nova Publishers.](#)

Many cities in developing countries have long been burdened with sprawling squatter settlements constituting unsanitary spaces in ad-hoc structures – overcrowded and inappropriate to contemporary standards of living. Occupied by the poor who have been trapped in the vicious cycle of poverty, lack of access to education, unemployment, and underemployment and therefore continued poverty, squatter settlements pose an insurmountable challenge to the city authorities and governments involved in the design and management of the built environments in cities. While approaches to breaking this cycle have shifted from housing to poverty alleviation often dependent on government subsidies, the need for sustainable development demands that these settlements be transformed in a manner that they contribute positively to social progress, economic growth, and environmental

improvements by themselves. This chapter presents a case study of an approach to transforming a number of old squatter settlements in Colombo, by which the squatters have been persuaded and facilitated to voluntarily move from slums and shanties to modern, multi-storey condominium apartments built to replace the squalid housing estates. The programme, based on an exchange of the real estate occupied by the squatters for apartments with modern conveniences, has released valuable urban land for “progressive developments” while enabling the poor to get out of the poverty trap and live in decent housing. It discusses the Sustainable Township Programme (STP), the government-owned development company that spearheaded the programme – Real Estate Exchange Limited (REEL), and how residents of Vanathamulla, one of the most dense and derelict squatter settlements have been moved to the condominium high-rise – Sahaspura. The chapter highlights the problems and potentials of this approach as a model for creating sustainable habitats in place of squatter settlements in cities.

[Joshi, S. & Khan, M. S. \(2010\). Aided self-help: the million houses programme – revisiting the issues. Habitat International, 34\(3\), 306-314.](#)

The self-help approach to housing aims at creating an enabling environment, an environment in which occupants of a piece of land, especially the poor, build their affordable houses fulfilling their current needs and progressively expand and/or improve the house to meet their changing needs. The Million Houses Programme in Sri Lanka “aided” self-help incorporated participation in decision-making, support for planning, design, construction, and financing. The project further expanded to enhance skills of settlement residents for taking-up community contracts for construction of community assets. Currently when relocation of slum dwellers in built housing is becoming the preferred option, this paper very briefly revisits the lessons learnt and the lessons that could still be learned from the experience of the Million Houses Programme and of the “People’s Process.” It argues that an “enabling environment” for increasing access to housing involves multi-pronged support through facilitators. The experience of the Million Houses Programme offers insights, even now, into effective strategies for aided self-help housing.

[Arimah, B. C. \(2010\). The face of urban poverty: Explaining the prevalence of slums in developing countries \(No. 2010/30\). WIDER working paper.](#)

One of the most visible and enduring manifestations of urban poverty in developing countries is the formation and proliferation of slums. While attention has focused on the rapid pace of urbanization as the sole or major factor explaining the proliferation of slums and squatter settlements in developing countries, there are other factors whose impacts are not known with much degree of certainty. It is also not clear how the effects of these factors vary across regions of the developing world. This paper accounts for differences in the prevalence of slums among developing countries using data drawn from the recent global assessment of slums undertaken by the United Nations Human Settlements Programme. The empirical analysis identifies substantial inter-country variations in the incidence of slums both within and across the regions of Africa, Asia as well as Latin America and the Caribbean.

[International Labour Organization. \(2008\). Community Infrastructure in Urban Areas.](#)

Over the years, the ILO has developed a set of technical tools to increase the impact of investments in rural infrastructure on local development, poverty reduction, and employment creation. The tools belong to four technical fields of operation: local development planning; local resource-based technology; small-scale contracting; and infrastructure maintenance. These tools contribute to building local capacity to provide such services by increasing efficiency in terms of how infrastructure is planned, designed, implemented, and maintained. Similar improvements are necessary in many

urban areas. The aim of this guide is to offer complementary tools for addressing similar needs for local infrastructure in urban areas. What is presented here are appropriate approaches for the improvement of low-income urban settlements based on practical experience.

[Dayaratne, R. and Kellett, P. \(2008\). Housing and home-making in low-income urban settlements: Sri Lanka and Colombia. *Journal of Housing and the Built Environment*, 23\(1\), 53-70.](#)

Enabling the making of a home is central to the practices of housing, but constructing a home is more than building adequate shelter. It is about establishing, nurturing, and managing social relationships and bringing together spaces, objects, and elements to represent and celebrate desired relationships, events, and memories. Drawing on empirical data from Sri Lanka and Colombia, this paper examines in detail the practices of home-making in low-income settlements. By focusing on people's conceptions of home and by identifying key social and societal practices, the paper offers insights into the processes of home-making among ordinary dwellers in developing countries and calls for culturally sensitive and holistic housing interventions which support and complement these processes.

[Fernando, N. \(2005\). Identifying the urban poor and investigating local-level poverty dynamics through CBMS: A case of Colombo. In proceedings of 2005 CBMS network meetings.](#)

The urbanization process in Sri Lanka has facilitated the movement of people from rural areas toward Colombo and its peripheral areas. The concentration of people and wealth in Colombo has generated new opportunities as well as new risks for city dwellers and has even led to an aggravation of some existing problems in relation to urban poverty. It is evident from recent data that nearly 20 percent of the Colombo population is poor (Silva, 1998). There are nearly 1506 underserved settlements in the Colombo Municipal area with 66,021 housing units. A majority of these settlements are slums and shanties, also known as low-income settlements (REEL, 1998). For urban development to be truly sustainable, the livelihoods of the urban poor must be secure. Unfortunately, poor people are exposed to a range of long-term economic, social, natural, and physical risks. Moreover, poor people often have no capacity to protect themselves due to unrealized livelihood strategies, i.e., inadequate assets, improper and unsuccessful asset management and lack of savings. Nevertheless, there are households that were "poor and vulnerable" in the past but have become "better-off and secure" today owing to successful and proper asset management and accumulation strategies.

It is against the above background that the first part of this paper discusses the implementation of Community-based Monitoring Systems (CBMS) in an urban resettlement location, particularly focusing on the different steps in the training of community members, data collection, data processing, community validation, analysis, dissemination and also some challenges of institutionalizing CBMS at the community level. The second part of the paper elaborates on the indicators that were developed to identify poor and better-off households considering five different types of vital household or livelihood assets (such as physical, human, economic and social-cultural) based on fieldwork carried out in a relocated urban settlement in Colombo. These exercises led to a better understanding of different poverty dimensions at the community level in general and the household level in particular. The data provided a good basis to monitor and evaluate different impacts of poverty reduction programmes implemented by various government and non-governmental organizations at regular intervals, using the "community-based monitoring system." This paper also argues that in general, households are poor due to their lack of income diversification, income security, and savings. However, there are situations where some households are poor due to the above-mentioned reasons as well as some other factors such as hard drug addiction, alcoholism, and chronic illness which are hidden sources of poverty.

[Sohail, M., Cavill, S., & Cotton, A. P. \(2005\). Sustainable operation and maintenance of urban infrastructure: Myth or reality? *Journal of urban planning and development*, 131\(1\), 39-49.](#)

It has become increasingly apparent that a paradoxical situation is emerging with respect to urban services in less developed countries. On the one hand, a huge demand for urban infrastructure has resulted from rapid urbanization; on the other, existing infrastructure is falling into disrepair before completing its design life. Operation and maintenance (O&M) have been identified by commentators as the key to enhancing the sustainability of existing infrastructure and assets. However, there is a general lack of understanding by stakeholders about the role of operation, maintenance and sustainability in the context of good governance. This paper explores the constraints to the operation, maintenance, and sustainability of urban services. The findings are based on case studies from India, Pakistan, and Sri Lanka. In each of the case locations, projects were completed more than three years ago. Data collection tools included document review, interviews, and participant observations. Forums and workshops were also held. In order to distinguish between the different constraints acting upon urban services, the term “sustainability” has been separated according to its technical, financial, and institutional aspects. This paper demonstrates how findings from community involvement in service delivery in developing countries can be of benefit to engineers or NGOs working with communities to improve the operation and maintenance of urban services in developed countries. Traditional centralized systems for O&M, which are the responsibility of municipalities and utilities, are not delivering. Recently there has been a search for alternatives such as community-based approaches. Internationally, it seems service users are being encouraged to ensure the infrastructure in their neighbourhood is kept in good condition. It is hoped that getting service users involved will lead to increased efficiency, benchmarking, raised awareness/debate, reduced waste, improved resource allocation, improved competitiveness – and contribute to national growth. However, evidence of the success of such schemes is rather patchy. It has been recognized that neither community nor government alone can ensure the sustainability of infrastructure; a partnership approach is needed. The keys to improving operation and maintenance—and hence sustainability – are the availability of information and the attribution of clear roles and responsibilities. Operation and maintenance can be seen to be the most important determinant of citizens’ satisfaction with urban services; this in turn leads to better governance.

[Bogahawatta, D. D. \(2004\). A Study on housing approaches for the “low-income” in Sri Lanka with special reference to their “socio-spatial” organizations \(Doctoral dissertation\).](#)

The house is a medium through which a person gives expression to himself. The house; a person builds embodies certain features of the owner's character, initially fashioned by the inherent views and attitudes of the community to which he belongs. The environment in which he is nurtured and the social group to which he belongs plays a significant part in moulding his outlook and ambition in life. The past housing endeavours have mostly been recognized as concepts of actualising the dwellers’ quantitative requirements; thus, may have been a mere provision of tangible human comfort and lacked the perceptual stimulation of home. It could be said, therefore that many housing schemes have not provided the stipulation for dwellers psychological, physical, social, and cultural manifestations that are essential for their existence. The approach of providing housing for urban low-income families is one such strategy, which lacked in qualitative aspects and coherence, has been a snatch in the recent past. They provided a different built environment to what occupants were used to. Hence, inevitably, changes began to occur, when they moved into these housing schemes. The built environment provided rapidly modified and personalized according to the needs and lifestyle of occupants, to fulfil their psychological, physical, social, and cultural needs and to create an intimate perception of home beyond the parameters of mere housing. But no doubt that there is no “profit”

factor to the government in providing housing for low-income people. Therefore, every strategy has to be economical to make such projects viable. It was identified by previous scholars that socio-spatial organization is vital in the low-income community unlike in high- or middle-income categories. They are being socialized or forced to socialize due to several factors. These factors have multiple effects on the space and sociability of these community groups. The attempt of this thesis would be to analyse those prevailing socio-spatial organisations to go for the “rational” implication to provide a better life for the low-income community.

[Brook, P. and Smith, W. \(2001\). Improving access to infrastructure services by the poor: institutional and policy responses. The World Bank.](#)

Governments around the world – rich and poor alike – confront the problem of how to ensure their people have access to efficient, reliable, safe, and affordable infrastructure services. This challenge is particularly acute in developing countries, with many low-income households and communities, and where density, distance, and resource availability often conspire to increase costs. Governments and stakeholders have addressed the problem in different ways, providing a rich body of experience with policy responses to this problem. Technology and economic thinking continue to evolve, opening up new policy options and opportunities for addressing the challenge of improving access. This paper provides an overview of current evidence on the nature and magnitude of the access challenge in developing countries, of the policy options available to governments seeking to improve service access by the poor, and of the institutional drivers that shape both feasible policy options and policy effectiveness. Part A summarizes available information on access to infrastructure services by low-income households and communities. Part B focuses on the key levers for policymakers to address the access challenge, looking at the roles of reforms to ownership, market structure, pricing policies, and subsidy and regulatory systems. Part C outlines how policy approaches might be adjusted to different institutional environments. Part D offers some concluding observations on implementation strategy.

[Ranjith, J. G. \(2000\). Governance and community participation: a collective approach for upgrading the Mahaiyawa slum community in Kandy, Sri Lanka \(Doctoral dissertation, University of British Columbia\).](#)

The purpose of this thesis is to explore a feasible approach for upgrading the largest slum community, known as Mahaiyawa, in the inner-city area of the Kandy, Sri Lanka. The community has been living in this location for over three generations, but the existing government institutional structure has not responded to ensure the economic, social, and environmental well-being of the people. The existing practices of the urban governmental system to solve the problems of the community have not been successful. Instead, the further fragmentation of the urban institutional network is the norm in Kandy. Considering the empirical evidence of institutional constraints and conflicts, the thesis mainly focuses on the lack of local government capacity as a crucial factor to be addressed in taking measures for upgrading the slum community. Although Sri Lanka implemented a decentralization policy at the beginning of the 1980s, the functional autonomy of the local governments is still limited due to a number of factors. The lack of the local governments' capacity is identified in four major areas, i.e., fiscal powers, access to financial resources, legal authority, and professionally qualified personnel. This impairs accountability, transparency, management efficiency, and the active role of civil society groups in governance. The thesis argues that capacity-building of the local government through decentralization of powers is a necessary policy reform, but this is not a sufficient condition for creating a new form of good governance. It requires both the ability and the collective responsibility of local authorities and actors in civil society, including representatives of the slum communities, if a new form of governance is to be created for addressing the problems of slum communities. The thesis concludes that the inability to solve the problems of the Mahaiyawa slum community is mainly due to

the lack of local government capacity, and therefore, certain aspects of the local governments' capacity should be strengthened. Capacity-building of local government necessarily involves the promotion of collective planning and implementation to solve the problems for upgrading the Mahaiyawa slum community. This study suggests that any effort to upgrade the slum community or relocate it to another area should be made in consultation and negotiation with the community and its leaders, to sufficiently address their concerns, particularly regarding ethnicity, culture, and social aspects, and their locational dependency on the city for economic reasons.

[Rent, G. and Rent, C. \(1978\). Low-income housing: Factors related to residential satisfaction. *Environment and Behavior*, 10\(4\).](#)

This study analyses residential satisfaction, both in terms of dwelling unit satisfaction and neighbourhood satisfaction, in relation to the type of structure, previous housing experience, social participation, housing aspirations, and social psychological perspectives. Interviews were conducted with 257 occupants of low-income housing units located in 33 different housing projects throughout South Carolina. While a high degree of satisfaction was found for both components of residential satisfaction, it was greater for the housing unit than the neighbourhood. A high degree of housing satisfaction was found to be significantly related to owning the dwelling, living in a single, rather than multiple, family unit, positive sentiments toward neighbours, a short duration in the present residence, and a positive life orientation. Degree of crowding, payment amounts, distance from relatives and friends and being a renter were not found to affect this satisfaction. No relationships were found between neighbourhood satisfaction and either length of residence there or length of residence in previous neighbourhood.

[R. G. Ariyawansa and M A N Rasanjalee Perera \(2015\) "Review of State Role in Provision of Housing for Low Income Community in the City of Colombo" in Brian C. Aldrich and Ranvinder S. Sandhu, \(Eds\), *Housing for the Urban Poor in Developing Countries*, Rawat Publications, New Delhi, pp. 137-158](#)

Finding effective and sustainable solutions for unmet housing needs has been a crucial issue globally (Joan, 2011; Sandhu, 2008). The situation in developing countries in this regard is much more critical. Urban areas in such countries are facing the problem, particularly in connection with the "urban poor" in a higher degree owing to rapid urbanization (Adesoji, 2011; Ariyawansa, 2009; Berner, 2000). Hence, countries have made several attempts to supply housing in different scales through different policies and programmes such as direct construction, slum and shanty upgrading, as well as self-help housing, to meet the rising demand of poor communities in urban areas for housing (Barnabas, 2006; Ganepolain www.hdm.lth.se/alumni/al accessed on 10.3.2010; Wakely, 2008).

However, many countries have not yet solved the problem of homelessness; instead, the problem has been continuing. This is clear according to the literature in the last 10-15 years. For instance, as per the literature in early 2000, the annual demand for houses from new families and replacements was said about 35 million in urban areas in developing countries during the next two decades (Erguden, 2001). Furthermore, the previous estimates show that more than 600 million people in world cities were homeless or lived in life or health threatening conditions (Berner, 2000). About 7 million people were living in slums and shanties in the city of Delhi alone (Sivam, 2003). In Sri Lanka, more than 50% of the total population of Colombo was living in under-serviced settlements in the city of Colombo (UDA, 1998). And as a whole, 40%-50% of population in many large cities in developing countries lived in informal settlements in 1987 (UNCHS, 1987).

1.1.1 Infrastructure Service: Water

[Chandrasekara, S. S. K., Chandrasekara, S.K., Sarath, P.H., Obeysekera, G.J., Manthirithilake, H., Kwon, H., & Vithanage, M. \(2021\). A review on water governance in Sri Lanka: The lessons learnt for future water policy formulation. *Water Policy* 23\(2\), 255–73. doi: 10.2166/wp.2021.152.](#)

Sri Lanka has no water scarcity and per capita, water availability is adequate to cater for the country's estimated peak population. Nevertheless, the frequent variability of spatial and temporal water availability and extreme events have built up a water scarcity in Sri Lanka, which has been observed during the last two to three decades. Therefore, effective and efficient water governance is most important in today's context, and regular review and amendment of policies, laws, and regulations are crucial to mitigate water scarcity. Although a few attempts were initiated, none of them succeeded. This study comprehensively reviews historical and present water governance mechanisms, including coordinating mechanisms and implementing water management agencies in Sri Lanka. Furthermore, the previously proposed water policies, their status and reasons for the failures of policies are discussed. Finally, it suggests the formulation of a novel institutional arrangement or altering the existing institutional arrangement with shared data and allocating non-shared responsibilities to each institution for better water governance in Sri Lanka.

[Dhungana, H., Clement, F., Otto, B., & Das, B. \(2021\). Examining social accountability tools in the water sector: A case study from Nepal. International Water Management Institute \(IWMI\). \(<https://www.iwmi.cgiar.org/publications/iwmi-research-reports/iwmi-research-report-179/>\).](#)

Enhancing accountability has become an important objective of governance reforms over the past two decades. Yet, only a few studies have explored the use of social accountability tools in the water sector in particular. This report aims to fill this gap, based on a case study of a donor-funded water, sanitation and hygiene (WASH) programme in Nepal. The research documents and analyses the effects of two types of social accountability tools implemented by the programme: public hearings and social audits. It examines how these tools have contributed to increased transparency, participation, voice, and accountability, and in turn discuss their potential to reduce corruption. It relies on qualitative methods to collect data in two water supply schemes in two districts of Nepal. The study found that the social accountability tools provided a platform for water users to participate and deliberate on issues related to the execution of WASH schemes. However, the scope of accountability narrowly focused on the integrity of the water user committees but did not provide the political resources and means for communities to hold funding and implementing agencies accountable. Furthermore, attention to budget management has not provided space to address environmental and social justice issues related to payment of wages, access to water, and decision-making processes in the design of the water scheme and water allocation. Findings from the study also indicate that the concept of deliberation and downward accountability, as envisioned in international development discourses, does not necessarily match with local power relationships and local cultural norms.

[Sevanatha Urban Resource Centre. 2020. Non-revenue water reduction and community participation in Colombo. Project Report.](#)

The Greater Colombo Water and Wastewater Management Improvement Investment Programme (GCWWMIIIP) is a programme assisted by the Asian Development Bank and is implemented by the National Water Supply and Drainage Board (NWSDB) under the Ministry of City Planning and Water Supply in Sri Lanka. SEVANATHA was selected for the above assignment as National NGO Consultant through a competitive bidding process by the Ministry. The period of the assignment was four years starting from 1st August, 2016. As specified in the TOR of this assignment, the GCWWMIIIP aims at “delivering better water supply and sewage services in an effective and efficient manner in the Greater

Colombo Area. The Investment programme comprises: establishing Colombo-wide non-revenue water (NRW) reduction mechanism, rehabilitating the water distribution network, strengthening institutional, operational and implementation capacity of the National Water Supply and Drainage Board (NWSDB) and the Colombo Municipal Council, increasing public awareness on NRW, and improving Wastewater Management in the Greater Colombo area beyond the Colombo City. The investment programme was implemented from 2014 to 2018. It used a multi-tranche financing facility (MFF) investment approach for projects 1 and 2. The MFF will concentrate on improving water supply in the North and East parts of Colombo city under project 1 and the West and South parts of Colombo city under project 2. The initial target of the projects 1 and 2 is to reduce the overall NRW in Colombo city from the current 49% to less than 18% by end of 2020.” The Scope of CMABC was: assessment of settlements in four packages; identify, operationalize and strengthen potential WUGs in settlements, create community awareness of project activities, implement the WASH programme for communities, implement GAP and ensure women’s participation; conduct Training of Trainer (TOT) training of National Water Supply and Drainage Board (NWSDB) staff on community mobilization and participatory planning; make communities aware of GRC and procedures; monitoring, reporting and documentation.

[Sinharoy, S., Pittluck, R., & Clasen, T. \(2019\). Review of drivers and barriers of water and sanitation policies for urban informal settlements in low-income and middle-income countries.](#)

This study examines drivers and barriers of water, sanitation, and hygiene (WASH) policies in urban informal settlements in low- and middle-income countries based on a search of peer-reviewed and grey literature published between January 2000 and April 2018. The evidence is organized into six domains of drivers and barriers: economic, spatial, social, institutional, political, and informational. Key drivers included donor prioritization and collective action, while key barriers included social exclusion, lack of land or dwelling tenure status, the political economy of decision-making, and insufficient data. Ensuring responsive water and sanitation policies for informal settlements will require inter-disciplinary collaboration and both top-down and bottom-up approaches.

[Cawood, S. \(2018\). Water and sanitation in Dhaka's low-income settlements, Bangladesh. https://www.environmentandurbanization.org/water-and-sanitation-dhaka%E2%80%99s-low-income-settlements-bangladesh](https://www.environmentandurbanization.org/water-and-sanitation-dhaka%E2%80%99s-low-income-settlements-bangladesh)

MicroSave’s “Low-Income Lives” series provides an opportunity to learn how low-income households manage their lives based on solid empirical data. In this edition, Sally Cawood draws on data collected in three low-income settlements to outline how much residents – a mixture of tenants, house owners and landlords – pay for water and sanitation (WatSan) services in Dhaka, Bangladesh. Despite significant improvements, fieldwork reveals that the costs and terms of access are greatly affected by overlapping financial and political insecurities at the household and settlement levels.

[Mcloughlin, C. & Harris, D. \(2013\). The politics of progress on water and sanitation in Colombo, Sri Lanka. Overseas Development Institute.](#)

This study explores the politics of urban water supply and sanitation delivery in the city of Colombo, Sri Lanka, where improvements in coverage have been achieved within a national context characterized by almost three decades of civil war. Though Colombo is by no means an unqualified success, or representative of the country as a whole, this isolated case offers an opportunity to unpick the role of politics in a story of relative progress. It also presents a possibility to compare the politics of two closely related but nevertheless technically and organisationally distinct services, and to examine whether and why these sectors attract different political dynamics. The broad conclusion is

that pervasive features of the political economy environment can interact with sector-specific characteristics to produce particular political dynamics around the delivery of different services. Both water supply and sanitation have been able to function effectively because these political dynamics have remained relatively stable over the medium term, in spite of the wider context of civil war.

[Mimrose, D. M. C. S., Gunawardena, E.R.N., & Nayakakorala, H. 2012. Assessment of sustainability of community water supply projects in Kandy District. *Tropical Agricultural Research* 23. doi: 10.4038/tar.v23i1.4631.](#)

Introduction of community water supply projects, implemented and managed by the community with initial support from governments or international organizations has been considered a useful strategy to provide access to safe drinking water to rural communities. Sri Lanka has also adopted this strategy through the Community Water Supply & Sanitation Project. Since there were concerns about the sustainability of numerous water schemes implemented throughout the country, a research study was carried out in 20 community-managed water schemes in eight Divisional Secretariat divisions in Kandy district to assess the sustainability of community-based rural water supply projects using a methodology adopted by the UNDP and World Bank in six other countries. Participatory research methodology tools were used for the assessment based on five sub-indicators, such as physical condition, operation and maintenance, consumer satisfaction, financial management and willingness-to-sustain the system. The results show that the community water supply projects to provide water to rural areas of Kandy district have been a success since 14 out of 20 schemes were found to be sustainable, indicating that the strategies followed during project implementation have succeeded. However, the study has also highlighted areas which require further attention to ensure that these systems would continue to provide the expected services and improve the functioning of other potentially sustainable schemes in the long run. A capacity building programme along with an institutional arrangement to provide the support services by the authorities, at least in the short term, is considered vital to help improve the community-based organizations and to make them capable and mature entities.

[Biswas, A. K., Jayatilaka, R., & Tortajada, C. \(2005\). Social perceptions of the impacts of Colombo water supply projects. *AMBIO: A Journal of the Human Environment*, 34\(8\), 639-644.](#)

The complexity of development activities, in which the interactions between various forces often mean that outcomes are unpredictable and unanticipated, highlights the importance of objective and comprehensive evaluations. In the specific case of the evaluation of towns east and south of Colombo water supply projects, the findings have major implications for the implementation of the Millennium Development Goals, if the water-related objectives are to be fulfilled. The study found that 30% of the households of these towns that are receiving clean, piped water are not using it for drinking. Instead, they are continuing to drink contaminated well water. Whereas it is considered that the main beneficiaries of water supply projects have been women and people who are sick, elderly, or disabled, the general perception is that the health conditions of the families have not improved with the provision of clean water (in fact, many claim that their health conditions have deteriorated). In spite of the higher cost of the supplied water, people are willing to pay for it as long as the supply is reliable.

[Rakodi, C. 2000. Getting the pipe laid is one matter and getting the water flowing through the pipe is another: User views on public-sector urban water provision in Zimbabwe, Sri Lanka, Ghana and India. *International Planning Studies* 5\(3\), 365–91. doi: 10.1080/713672857.](#)

The arguments for a more market-oriented approach to urban water provision and their implications for user-provider relationships are reviewed. It is argued that, although there are convincing reasons for adopting a more demand-oriented approach than traditional approaches in the urban water

sector, a pure market orientation is inappropriate, infeasible, and insufficient. Consequently, means of ascertaining user preferences are needed that are alternative or additional to the consumption choices of individual purchasers. Alternative ways of assessing user views are reviewed. Selected findings relevant to the water sector reform agenda from qualitative studies in four countries are presented. These focus on the choices made by users in the light of restrictions on the availability of piped supply, their perceptions of the services provided, identification of desirable improvements, and attitudes towards private-sector participation and increased cost recovery. It is concluded that information collected through qualitative methods (focus group discussions) can usefully complement quantitative information in ascertaining user views on water supply arrangements.

[Fernando, K. & Sanjeevani, 2009. K. I. H. Water pricing for the urban poor.](#)

In Sri Lanka, access to water for domestic purposes has reached 84.7% of the population, while in urban areas access to water is as high as 95.4% (DCS, 2008). This study reveals that while these statistics indicate that access itself may not be an issue in urban areas, it masks disparities in terms of the quality and equal access to services that exists among urban populations. For the urban poor, many of whom reside in underserved settlements (USS), water services are provided mainly through public facilities such as stand posts, common toilets, and bathing areas. This provides them with a lower quality service that can limit their quality of life. From the point of view of the service provider, in this case the National Water Supply and Drainage Board (NWSDB), public water is considered “free water” that they are obligated to provide so that communities are not denied access to a basic need. The NWSDB sees individual household connections as a means to provide better water services to the urban poor by also allowing them to recover their costs. However, in order to reach a larger number of urban poor who are unable to connect through the regular process due to financial, legal, or infrastructure limitations, an alternative strategy needs to be devised and water pricing methods are commonly used for this purpose.

1.1.2 Infrastructure Service: Sanitation

[Ruzaik, F. \(2020\). Health issues of dwellers around the urban solid waste dumpsites in Sri Lanka: Comparative analysis of Colombo, Kandy, Kurunegala and Badulla Urban Areas.](#)

Improper urban solid waste management will directly and indirectly affect the land, water, and air; causing multifarious human health and environmental risks. However, such issues cannot be wiped-off completely, but its volume and risk levels could be minimized and managed at an acceptable point. Accordingly, the prime objective of this study is to identify and compare the health issues related to urban solid waste disposal among the selected study areas according to its geographical variations and provide possible solutions in terms of mitigation and management. Colombo and Kandy municipalities from the wet agro-ecological zone and Kurunegala and Badulla municipalities from the intermediate agro-ecological zone were incorporated as samples for this study. These four sample study areas were selected considering its different elevation ranges and the prominent urban areas with different geographical features and existence of crucial solid waste related issues, following the mangle of both purposive and stratified sampling methodology. A total of 867 sample households were selected, following a stratified random sampling technique. The structured and semi-structured questionnaires were also used to collect primary data from various target groups. The collected primary data were coded and analysed, using Microsoft Excel and SPSS, ANOVA and ANOVA Scheffe’s as appropriate. The study identified 23 types of similar diseases in all selected sample areas; however, its volume and the risk level are varied based on its geographical factors, population density, volume of waste generation/collections, literacy level, income level, public behaviours etc. Of the total health issues, the Colombo site accounts for 45.6%, Kandy 21.4%, Badulla 17.6% and Kurunegala 15.4%.

Furthermore, this study found that 56.7% of the female population have been victimized with different types of health issues, since women spent more time around the dumpsites as housewives and waste pickers. The figure is much higher than for males, which is (43.3%). Similarly, 65.5% of the child population, 75% of waste pickers, and 70% of waste collectors/vehicle drivers have also been affected by multiple health problems due to the direct contact with waste dumpsite. This study recommends a central point for managing, monitoring, and controlling all processes of environment-related activities and implementation of integrated solid waste management (ISWM) systems, consolidating all related factors of the waste management hierarchy at a centre point.

[Schelbert, V., Meili, D., Alam, M., Simiyu, S., Antwi-Agyei, P., Adjei, K., Lüthi, C. \(2020, December 1\). When is shared sanitation acceptable in low-income urban settlements? A user perspective on shared sanitation quality in Kumasi, Kisumu, and Dhaka. *Journal of Water, Sanitation and Hygiene for Development*, 10\(4\).](#)

Shared sanitation facilities (SSFs) have contributed considerably to sanitation access in many low-income settlements. While many SSFs are of unacceptable quality, others have been found to be a hygienically safe and a socially and economically viable sanitation option. Within its framework, the WHO/UNICEF Joint Monitoring Programme (JMP), evaluating progress on the Sustainable Development Goals, considers shared sanitation as “limited sanitation”. Overall, there is uncertainty about the criteria to distinguish between unacceptable and acceptable quality of SSF. The study used a user-centred qualitative approach in low-income urban settlements in Kumasi (Ghana), Kisumu (Kenya) and Dhaka (Bangladesh) and conducted 17 focus group discussions to evaluate how SSF users define the quality of an SSF and which aspects they consider as essential priorities for good-quality SSF. In descending order, the user priorities identified are: immediate water access, cleanliness, gender-separated toilets, flush toilets, lighting for use at night, lockable/functional doors, tiling, handwashing stations, and privacy. This list can serve as input to the sanitation guidelines, local building codes and the establishment of minimum national sanitation standards. SSFs that meet these minimal criteria can then be promoted as an incremental step when individual household facilities are not feasible.

[Deshpande, A., Miller-Petrie, M., Lindstedt, P., and Baumann, M. \(2020\). Mapping geographical inequalities in access to drinking water and sanitation facilities in low-income and middle-income countries, 2000–17. *The Lancet Global Health*, 8\(9\), 1162–85. doi: 10.1016/S2214-109X\(20\)30278-3.](#)

Universal access to safe drinking water and sanitation facilities is an essential human right, recognized in the Sustainable Development Goals as crucial for preventing disease and improving human wellbeing. Comprehensive, high-resolution estimates are important to inform progress towards achieving this goal. The mapping aimed to produce high-resolution geospatial estimates of access to drinking water and sanitation facilities.

The study used a Bayesian geostatistical model and data from 600 sources across more than 88 low-income and middle-income countries (LMICs) to estimate access to drinking water and sanitation facilities on continuous continent-wide surfaces from 2000 to 2017, and aggregated results to policy-relevant administrative units. It estimated mutually exclusive and collectively exhaustive subcategories of facilities for drinking water (piped water on or off premises, other improved facilities, unimproved, and surface water) and sanitation facilities (septic or sewer sanitation, other improved, unimproved, and open defecation) with use of ordinal regression. The study also estimated the number of diarrheal deaths in children younger than five years attributed to unsafe facilities and estimated deaths that were averted by increased access to safe facilities in 2017 and analysed geographical inequality in access within LMICs. Findings across LMICs, access to both piped water and

improved water overall increased between 2000 and 2017, with progress varying spatially. For piped water, the safest water facility type, access increased from 40·0% to 50·3%, but was lowest in sub-Saharan Africa, where access to piped water was mostly concentrated in urban centres. Access to both sewer or septic sanitation and improved sanitation overall also increased across all LMICs during the study period. For sewer or septic sanitation, access was 46·3% in 2017, compared with 28·7% in 2000. Although some units improved access to the safest drinking water or sanitation facilities since 2000, a large absolute number of people continued to not have access in several units with high access to such facilities in 2017. More than 253,000 people did not have access to sewer or septic sanitation facilities in the city of Harare, Zimbabwe, despite 88·6% access overall. Many units were able to transition from the least safe facilities in 2000 to safe facilities by 2017; for units in which populations primarily practised open defecation in 2000, 686 of the 1830 units transitioned to the use of improved sanitation. Geographical disparities in access to improved water across units decreased in 76·1% of countries from 2000 to 2017, and in 53·9% of countries for access to improved sanitation but remained evident sub-nationally in most countries in 2017.

Interpretation of the estimates, combined with geospatial trends in diarrheal burden, identify where efforts to increase access to safe drinking water and sanitation facilities are most needed. By highlighting areas with successful approaches or in need of targeted interventions, the estimates can enable precision public health to effectively progress towards universal access to safe water and sanitation.

[Hyun, C., Burt, Z., Crider, Y., Nelson, K.L., Prasad, C.S.S., Rayasam, S.D.G., Tarpeh, W., and Ray, I. \(2019\). Sanitation for low-income regions: A cross-disciplinary review. *Annual Review of Environment and Resources* 44\(1\), 287–318. doi: 10.1146/annurev-environ-101718-033327.](#)

Sanitation research focuses primarily on containing human waste and preventing disease; thus, it has traditionally been dominated by the fields of environmental engineering and public health. Over the past 20 years, however, the field has grown broader in scope and deeper in complexity, spanning diverse disciplinary perspectives. The article reviews the current literature in the range of disciplines engaged with sanitation research in low- and middle-income countries (LMICs). The study finds that perspectives on what sanitation is, and what sanitation policy should prioritize, vary widely. It shows how these diverse perspectives augment the conventional sanitation service chain, a framework describing the flow of waste from capture to disposal. It reviews how these perspectives can inform progress toward equitable sanitation for all [i.e., Sustainable Development Goal (SDG) 6]. The key message is that both material and nonmaterial flows – and both technological and social functions – make up a sanitation “system.” The components of the sanitation service chain are embedded within the flows of finance, decision making, and labour that make material flows of waste possible. The functions of capture, storage, transport, treatment, reuse, and disposal are interlinked with those of ensuring equity and affordability. The study finds that a multi-layered understanding of sanitation, with contributions from multiple disciplines, is necessary to facilitate inclusive and robust research toward the goal of sanitation for all.

[Acey, C., Kisiangani, J., Ronoh, P., Delaire, C., Makena, E., Norman, G., Levine, D., Khush, R., & Peletz, R. \(2019\). Cross-subsidies for improved sanitation in low-income settlements: Assessing the Willingness to pay of water utility customers in Kenyan cities. *World Development* 115: 160–77. doi: 10.1016/j.worlddev.2018.11.006.](#)

Most residents of the developing world do not have access to safely-managed sanitation services, and large financial investments are required to address this need. The study evaluates surcharges on water/sewerage tariffs as an option for supporting these investments in low-income neighbourhoods.

It investigates the willingness-to-pay (WTP) for a pro-poor sanitation surcharge among customers of two urban water utilities in Kenya. Applying qualitative and quantitative methods, the study conducted semi-structured in-depth interviews, focus-group discussions, and a double-bounded contingent valuation method for measuring WTP. The scenarios were varied quasi-experimentally to study the effects of messaging and surcharge characteristics and evaluated factors associated with WTP. The study finds that mean WTP is 290 KES (USD 2.9) per month, about 8% of the average water bill; the median WTP is 100 KES (USD 1). In a multivariate analysis, WTP was significantly higher among customers that were younger, wealthier, shared toilets, and had higher water bills. WTP was also higher among customers that trusted the utility and distrusted the county government. Of the randomized scenarios, only the bill type was found to significantly influence WTP; WTP was higher if the surcharge was presented as a proportion of the customers' last water bill vs. a flat amount. The findings suggest that in a sector that struggles to provide universal access to sanitation services, cross-subsidies may offer a means to support financing of safe sanitation for low-income households. These results indicate there are opportunities for cross-subsidies in urban Kenya that may be relevant for a wider understanding of surcharge payments that support basic services for low-income citizens.

[Thrikawala, S., & Narayanan, N. C. \(2018\). Foreign assistance, dependence and debt: Sanitation case study, Kandy, Sri Lanka. *Water Governance and Civil Society Responses in South Asia* \(pp. 144-169\). Routledge India.](#)

This chapter focuses on wastewater disposal issues in Kandy, Sri Lanka, that includes a world heritage site because of its cultural, historical, and aesthetic values. It discusses the experience and possible implications of foreign aid projects globally and in Sri Lanka, and reviews the debate on foreign aid, aid dependency, and development. The chapter analyses the process that led to a financial crisis in the National Water Supply and Drainage Board (NWSDB) that forced the organization to go for the proposed project with foreign assistance. It discusses the current problem in Kandy city and the expected benefits and estimates costs of the Kandy City Water Supply Augmentation and Environmental Improvement Project. Pollution by sewage, fertilizers, pesticides, and toxic metals degrade the quality of water available for human consumption combined with NWSDB incurring progressively higher cost in treating water. Rural water supply and sanitation, including deep well programmes, are being implemented by the board.

[Thrikawala, S., Gunawardena, E. R. N., & Gunaratne, L. H. P. \(2018\). Sustainable urban water supply and sanitation: A case from Kandy, Sri Lanka. In *Globalization of Water Governance in South Asia* \(pp. 292-310\). Routledge India.](#)

This chapter aims to assess the sustainability of water supply and sanitation services (WSS) in Kandy. It presents the methodology, which included data collection and analysis of the three major components: governance, management and financing, and cost recovery aspects. The chapter focuses on the National Water Supply and Drainage Board (NWSDB) and the Kandy Municipal Council (KMC) as key institutions of water and sanitation facilities to the city. It considers the issues of national importance that came to the fore since the NWSDB became the major national institution providing WSS services to the entire country of Sri Lanka. Government and donor organizations provide financial support for the community-based water supply and sanitation facilities to rural sections.

[Irshadh, A. G. \(2015\). A Critical evaluation of wastewater disposal facilities in selected underserved settlements in the Colombo municipal area and recommendations for improvements \(Doctoral dissertation\).](#)

Sanitation has become a problem in many developing countries. According to reports from WHO and UNICEF in 2012 about 2.6 billion people around the world lack this facility; about half the developing world lacks even simple latrines. An underserved settlement (USS) is where communities live lacking access to basic services. Half the Colombo city's population lives in such settlements. It is essential for the state to provide better sanitation and improved wastewater (WW) disposal systems. To assess the type of water supply available, prevailing wastewater disposal methods and the sanitation systems, and to identify the types of toilets, six USSs were selected for a survey, considering the municipal districts and the different types of WW disposal systems prevailing in the Colombo Municipal area. The results were evaluated against the standards provided by the Joint Monitoring Programme of the WHO. During the study period there were 371 households (HHs) in six selected USSs. About 90% of the HHs have individual water connections, one for each 10 to 12 HHs that have individual septic tanks and a minimum of one cluster of HHs that use a common septic tank, from each USS were chosen as representatives for a detailed study in the aspects of water usage and WW disposal. The results for satisfactory septic tanks vary from 40% to 100%. Nevertheless, none of the households has a septic system and that results in diverting the septic tank effluent to the storm water drains, ending up polluting the water bodies. In terms of toilet usage, only in one USS all the HHs has access to an improved sanitation facility. Except one USS, in the other five, 50% of the HH which have improved toilets are named using unimproved toilets. Only in two USSs less than 15% HHs directly dispose WW to the storm water drains. It is commendable that approximately 75% of the HHs, which has permanent housing, is willing for sanitation improvements. Based on these results recommendations are given to enhance sanitation in the USSs.

[Joshi, D., Fawcett, B. & Mannan, F. \(2011\). Health, hygiene, and appropriate sanitation: experiences and perceptions of the urban poor. *Environment and Urbanization*, 23\(1\), 91-111.](#)

"Don't teach us what is sanitation and hygiene." This quote from Maqbul, a middle-aged male resident in Modher Bosti, a slum in Dhaka city, sums up the frustration of many people living in urban poverty to ongoing sanitation and hygiene programmes. In the light of their experiences, such programmes provide "inappropriate sanitation," or demand personal investments in situations of highly insecure tenure, and/or teach "hygiene practices" that relate neither to local beliefs nor to the ground realities of a complex urban poverty. A three-year ethnographic study in Chittagong, Dhaka, Nairobi and Hyderabad illustrates those excreta disposal systems, packaged and delivered as low-cost "safe sanitation," do not match the sanitation needs of a very diverse group of urban men, women, and children. The delivered systems are neither appropriate nor used and are not sustained beyond the life of the projects. This mismatch, far more than an assumed lack of user demand for sanitation, contributes to the elusiveness of the goal of sanitation and health for all. The analysis indicates that unless and until the technical, financial, and ethical discrepancies relating to sanitation for the urban poor are resolved, there is little reason to celebrate the recent global declaration on the human right to water and sanitation and health for all.

[Paterson, C., Mara, D., & Curtis, T. \(2007\). Pro-poor sanitation technologies. *Geoforum* 38\(5\), 901-7. doi: 10.1016/j.geoforum.2006.08.006.](#)

It is estimated that at least two billion people have inadequate sanitation. The current situation in water and sanitation services for millions of peri-urban residents is starkly anti-poor and represents a major challenge for the 21st century. By virtue of its cost and water requirements, it is argued that conventional sewerage is an implicitly anti-poor technology. This paper summaries low-cost sanitation technologies that have been developed by engineers from around the world and seeks to provide evidence that there is such a thing as a pro-poor technology. It argues that simplified sewerage is often the only sanitation technology that is technically feasible and economically appropriate for low-

income, high-density urban areas. Simplified sewerage will only truly be a pro-poor technology if issues such as lack of investment in sanitation, insufficient cost recovery for sanitation services, conservative technical standards favoured over innovation, low-cost technologies perceived as second-class provision, the nature of peri-urban settlements, and lack of engagement with users, are addressed. So often, peri-urban sanitation schemes fail to exist, fail to be sustainable, or fail to be pro-poor. The challenge is for engineers, social scientists and other professionals to work together to make pro-poor sanitation a reality and interdisciplinary the norm.

[Russell, S. & Gilson, L. \(2006\). Are health services protecting the livelihoods of the urban poor in Sri Lanka? Findings from two low-income areas of Colombo." *Social Science & Medicine* 63\(7\), 1732–44. doi: 10.1016/j.socscimed.2006.04.017.](#)

Investing in pro-poor health services is central to poverty reduction and achievement of the Millennium Development Goals. As health care financing mechanisms have an important influence over access and treatment costs, they are central to the debates over health systems and their impact on poverty. This paper examines people's utilization of health care services and illness cost burdens in a setting of free public provision – Sri Lanka. It assesses whether and how free health care protected poor and vulnerable households from illness costs and illness-induced impoverishment, using data from a cross-sectional survey (423 households) and longitudinal case study household research (16 households). The findings inform policy debates about how to improve protection levels, including the contribution of free health care services to poverty reduction. Assessment of policy options that can improve health system performance must start from a better understanding of the demand-side influences over performance.

[Lewis, K. \(2005\). *Health, dignity, and development: what will it take?* UN Millennium Project Task Force on Water and Sanitation. Washington DC.](#)

The Millennium Development Goals, adopted at the UN Millennium Summit in 2000, are the world's targets for dramatically reducing, by 2015, extreme poverty in its many dimensions: income poverty, hunger, disease, exclusion, lack of infrastructure and shelter while promoting gender equality, education, health and environmental sustainability. These bold goals can be met in all parts of the world if nations follow through on their commitments to work together to meet them. Achieving the Millennium Development Goals offers the prospect of a more secure, just, and prosperous world for all. The UN Millennium Project was commissioned by United Nations Secretary-General Kofi Annan to develop a practical plan of action to meet the Millennium Development Goals. As an independent advisory body directed by Professor Jeffrey D. Sachs, the UN Millennium Project submitted its recommendations to the UN Secretary General in January 2005. The core of the UN Millennium Project's work has been carried out by 10 thematic Task Forces comprising more than 250 experts from around the world, including scientists, development practitioners, parliamentarians, policymakers, and representatives of civil society, UN agencies, the World Bank, the IMF, and the private sector. In this report the UN Millennium Project Task Force on Water and Sanitation outlines the bold yet practical actions that are needed to increase access to water and sanitation. The report underscores the need to focus on the global sanitation crisis, which contributes to the death of 3900 children each day, improve domestic water supply, and invest in integrated development and management of water resources, all of which are necessary for countries to reduce poverty and hunger, improve health, advance gender equality, and ensure environmental sustainability. Implementing the recommendations of this report will allow all countries to halve the proportion of people without access to safe water and sanitation by 2015.

[Van Horen, B. \(2004\). *Fragmented coherence: solid waste management in Colombo. International Journal of Urban and Regional Research*, 28\(4\), 757-773.](#)

Notwithstanding the increasingly fragmented organizational relationships within Colombo's urban governance system, the cooperative nature of stakeholder relationships lends a high level of coherence to the overall system. Since 1995, Colombo's solid waste management system has been characterized by the increased role of the private sector, community-based organizations, and NGOs. Whilst the increasingly fragmented nature of this system exhibits some deeply ingrained problems, there are also a number of positives associated with the increased role of civil society actors and, in particular, the informal sector. Reforming regulatory frameworks so as to integrate some of the social norms that are integral to the lives of the majority of urban residents will contribute to regulatory frameworks being considerably more enforceable than is currently the case. Such reform requires that institutional and regulatory frameworks need to be flexible enough to adapt to the changing social, political, and economic context. In the Colombo case, effective cooperation between public sector and civil society stakeholders illustrates that adaptive institutional arrangements grounded in pragmatism are feasible. The challenge that arises is to translate these institutional arrangements into adaptive regulatory frameworks – something that would require a significant mind shift on the part of planners and urban managers.

[Madubhashini, P. V. S. & Dayawansa, N.D.K. n.d. *Water use and hygiene practices of a slum community in Colombo District: a gender focused study.*](#)

This study reveals that the slum residents in the Colombo District have a number of issues related to their housing, socio-economic problems such as poor income, and income disparities between males and females. However, they have access to water. It is evident that lack of awareness about health and hygienic conditions, use of safe drinking water, lack of awareness on menstrual hygiene are some aspects that need attention. Hence, it is important for the authorities to formulate strategies to improve their infrastructure facilities and to make the residents aware of health and hygiene practices. Government health services should pay more attention to improving the health conditions of these residents and arrange health camps with minimal charges to improve knowledge regarding proper sanitation practices.

[Anon. n.d. *Development Projects: LK Water Supply and Sanitation Improvement Project – P147827.*](#) World Bank.

The development objectives of the Water Supply and Sanitation Improvement Project for Sri Lanka are to increase access to piped water services and improved sanitation in selected districts and to strengthen the capacity of associated institutions. There are four components to the project, the first being water supply and sanitation infrastructure. This component will finance infrastructure investments to support expansion of piped water services in urban, rural, and estate areas in the above-mentioned selected districts. Cost-effective technical solutions will ensure that each unit of investment delivers the maximum service improvement. The second component is institutional capacity strengthening. The project will support the detailed design and operationalization of the Department of National Community Water Supply, or DNCWS, through the following activities: (a) preparation of a detailed design of the department including organizational structure, staff numbers and skill sets, job descriptions and so on; (b) offices and equipment needed to set up the department in each district; and (c) training for staff of the department. This component will also support strengthening of other institutions required for the delivery of increased access to piped water services and improved sanitation in the selected districts. The third component is the sectorial technical assistance. The project will support technical assistance to improve sector capacity,

including: preparation of a Comprehensive Water Supply and Sanitation Sector Programme, in collaboration and consultation with the National Planning Department, to improve water supply and sanitation across the island. This will allow GoSL to strategically invest in the sector through a programmatic approach which can be financed by local or foreign.

1.1.3 Infrastructure Service: Transportation

[Tennakoon, V., Wiles, J., Peiris-John, R., Wickremasinghe, R., Kool, B., & Ameratunga, S. \(2020\). Transport equity in Sri Lanka: Experiences linked to disability and older age. *Journal of Transport & Health*, 18, 100913.](#)

Transport, a well-recognised determinant of health, is particularly salient to well-being and equitable health outcomes amongst older people and people with disabilities living in low- and middle-income countries. This study explored the facilitators and barriers of safe and accessible transportation from the perspectives of older people and those living with disabilities in Sri Lanka.

The community-based qualitative research study involved eight focus group discussions conducted among older people (60 years and above) and people living with disabilities (physical, sensory, learning impairment; aged 12 years and above) in the Colombo district, Sri Lanka. Thematic analysis was used to analyse data.

The transport challenges perceived by participants were multi-faceted and often inter-related. Participants identified barriers embedded in the built environment and transport infrastructure, such as poorly-designed road systems and public vehicles, unsatisfactory services, lack of representation in road development programmes, reduced opportunities for meaningful participation in the society and negative attitudes of the general public, as limitations for safe and accessible transportation. Poverty exacerbated the transport inequities experienced by the participants, affecting their quality of life and well-being. The study findings indicate the need for a national policy and legislative reforms that prioritize age- and disability-inclusive transport systems and infrastructure, and accessible and affordable transport modes in Sri Lanka. To ensure equitable opportunities and wellbeing, it is also imperative to foster meaningful relationships and positive societal attitudes towards older people and those living with disability.

[Venter, C., Mahendra, A., & Hidalgo, D. \(2019\). From mobility to access for all: Expanding urban transportation choices in the global South, 1-48. World Resources Institute, Washington, DC.](#)

This working paper is part of a series of papers comprising the World Resources Report (WRR) “Towards a More Equal City,” which views sustainability as composed of three interrelated issues: equity, the economy, and the environment. The WRR examines whether the equitable provision of urban services to meet the needs of the underserved can improve the other two dimensions of sustainability. Each paper focuses on actionable solutions that have been proven to work across cities of the global South. The key enabling factors that support these actions are also discussed. This paper asks what cities can do to change the trajectory of the urban transportation sector so that it provides the underserved with more equitable access to opportunities. The study argues that in addition to being more equitable, cities that are built to be more accessible to all stand the best chance of solving the problems of deteriorating environmental quality and economic competitiveness that stem from growing traffic congestion and urban sprawl. The paper identifies specific actions for promoting multimodal accessibility that are grouped into three action areas: building complete, democratic, and safe street networks; integrating public, informal, and private modes into an ecosystem of high quality, user-oriented transport services; and managing the demand for private vehicle use. These actions need to be tailored in scale, pace, and timing to the nature and size of a city’s particular

problems. Two cross-cutting conditions are needed to enable effective action: capable and visionary governance. Moreover, planning institutions need to be nurtured, and sustainable and adequate funding models must be developed.

[Starkey, P. & Hine, J. 2014. How transport affects poor people with policy implications for poverty reduction. *Poverty and Sustainable Transport*.](#)

This review of the poverty implications of urban and rural transport was requested by the Partnership on Sustainable, Low Carbon Transport (SLoCaT), contracted by UN-Habitat and implemented by the Overseas Development Institute (ODI) with funding from UK Department of International Development (DFID). The research questions concerned the extent to which the poor can participate in the transport sector, benefit from transport, and be adversely affected by transport externalities. About 360 documents were reviewed, most in English. A significant proportion of the documents were produced by, or in association with, a relatively small number of international and “northern” development agencies, including multilateral development banks (World Bank and ADB) and DFID-supported research programmes.

[Kumarage, A. \(2007\). Impacts of transportation infrastructure and services on urban poverty and land development in Colombo, Sri Lanka. *Global Urban Development Magazine*, 3\(1\), 1-15.](#)

The research concludes that (a) In urban areas, more people work outside their local communities when compared to rural or agriculturally based communities. It is also shown that those who are employed outside their communities enjoy higher incomes. However, for income groups below Rs 10,000/= there is a lack of adequate and affordable transport facilities and therefore it can be concluded that for those with lower incomes a greater value addition for their output can be obtained if they can commute to urban centres where employment opportunities are greater. This is further confirmed when daily paid casual labour show a significantly lower propensity to seek work in outside communities when compared to salaried (monthly paid) employees. This may be mostly due to the fact that those with steady jobs can get discounted bus and rail passes, while those seeking casual labour and work in different places are unlikely to obtain convenient and cheap transport facilities and thus consequently have to bear the full cost of travel. (b) The ownership of bicycles is relatively high for all income groups. This level of affordability makes the bicycle a vehicle to access work for the poor. This may be in fact one reason why the poor appear to be constrained to work in local communities, since this relatively inexpensive form of non-motorized transport is available. (c) With respect to expenditure on transport it appears that the urban poor spend proportionately more on public transport than the rural poor do. This could be due to difficulties in using alternative modes of transport in urban areas, particularly bicycles; or else it could also be due to longer distances to work and school. (d) The analysis of the data from surveying of the working poor shows that the lower the average income, the higher is the cost of transport for commuting. This includes time costs. It is also indicative that the lower the income, the greater appears to be the access distances to the main bus and train corridors. The access costs — namely the time costs — appear to be the significant contributor to increasing the cost of transport of the lower income earners. (e) The analysis also provides evidence that land prices decrease sharply with the increasing cost of commuting from the place of work. Doubling of transport costs indicates a halving of land prices and vice-versa. This results in more people who live in distance areas being able to afford their own house as opposed to those who live closer to the city who live in rented or illegal squatter lands. Thus there is clear evidence that poor transport forces the working poor to seek residence within the city, where the only ‘affordable’ land is the illegal squatter type or low-amenity government flats within the city. (f) The survey also reveals that the average working hours also decrease proportionately with the cost of commuting to work. The average cost of time appears to be valued at around Rs 30 to Rs 40 per hour. This works out

to a daily wage rate of between Rs 250 and Rs 400, which is close to market rates. (g) As opposed to general vehicle ownership, it appears that the ownership of bicycles among those who commute to work in Colombo City is significantly lower. This indicates that fewer workers utilize bicycles to access work in Colombo or even to access motorized modes of transport such as buses and trains. However, this also provides an opportunity for accessing work outside their own communities if park and ride facilities are provided for bicycles in small town within commuting distances. There are a few such places that have evolved — however there is now evidence that a more organized attempt could be justified.

[Sohail, M., Maunder, D. A. C., & Cavill, S. \(2006\). Effective regulation for sustainable public transport in developing countries. *Transport Policy*, 13\(3\), 177-190.](#)

This paper has two key objectives. Firstly, using the findings from case study research undertaken in Colombo (Sri Lanka), Faisalabad (Pakistan) and Dar es Salaam (Tanzania), it seeks to demonstrate the importance of an appropriate regulatory framework and effective mechanisms of enforcement for sustainable urban transport systems in developing countries. Secondly, the paper highlights the critical importance of communication and co-ordination between stakeholders (defined here as transport users, providers and regulators) if regulation is to be effective. The views of poor and disadvantaged passenger groups – women, children, the elderly and disabled – are used in the paper to illustrate the importance of transport systems to their livelihoods, such as work, education, health and social pursuits. The case studies suggest that in the context of the failure of both the fully regulated public transport sector and the completely deregulated sector self-regulation is a potentially useful alternative. In practice, self-regulation has been achieved in the case study locations through the formation of cooperatives or associations of stakeholders such as users and operators.

[Sohail, M. \(2005, March\). Sustaining livelihoods by improving urban public transport. In proceedings of the Institution of Civil Engineers – *Engineering Sustainability*, 158\(1\), 9-15\). Thomas Telford Ltd.](#)

This paper reports on the application of the Sustainable Livelihoods Approach to the wider impacts of urban public transport on the lives of the urban poor in developing countries. In applying the Sustainable Livelihoods Approach to the research data, transport is considered as an asset within the Sustainable Livelihoods framework. It draws upon findings of case studies undertaken between 2001 and 2003 in Colombo (Sri Lanka), Faisalabad (Pakistan), and Dar-es-Salaam (Tanzania). Using a combination of quantitative and qualitative data, the study looks at price, affordability, accessibility, and quality of public transport services.

Davis, A. S. C., Maunder, D. A. C., & Fouracre, P. R. (2004). Activity patterns, transport and policies for the urban poor. In CODATU XI: world congress: Towards more attractive urban transportation.

Traditionally, urban transport planners have been concerned with understanding trip patterns (spatially and temporally) as an indicator of travel demand. However, the planning process can be complemented by a better understanding of household activity patterns, and the impacts and implications of travel on livelihoods. The paper describes the methodology, approach and findings of a research project undertaken in Ghana, Zimbabwe, and Sri Lanka to investigate and address ways in which transport influences how well other sectors (in particular health, education and employment) operate and deliver benefits which contribute to the sustainable livelihoods of the urban poor.

[Anon. 2001. Urban poverty and transport: A case study from Karachi. *Environment and Urbanization* 13\(1\), 223–33. doi: 10.1177/095624780101300116.](#)

This paper examines the role of transport provision on the lives of low-income groups in Karachi. It draws on interviews with 108 transport users living in one central and four peripheral neighbourhoods, and on interviews and focus group discussions with bus owners and drivers. It describes the large distances that most poor groups have to travel to get to and from work, and the costs; most bus users spend more than 10 per cent of their income on bus fares. It describes the time spent travelling (most people spend more than two hours a day travelling), the overcrowding and sexual harassment on the buses, the absence of schedules, the limited hours of operation and the high rate of accidents. The government authorities have failed to provide the framework needed for an integrated system, any bus terminals and other facilities – resulting in road encroachment by bus-related activities. It also describes how mini-buses are acquired by entrepreneurs, and the informal payments they have to make to be allowed to operate.

[Tiwari, G. \(2002\). Urban transport priorities: meeting the challenge of socio-economic diversity in cities, a case study of Delhi, India. *Cities*, 19\(2\), 95-103.](#)

Non-motorized transport is an integral element of urban transport in Indian cities. More than 50% of the city residents cannot afford any other mode of transport unless heavily subsidized. Therefore, non-motorized transport has to be given equal priority in designing urban infrastructure. This paper uses Delhi, India as a case study to indicate that the existing urban transport infrastructure in cities does not meet the needs of a large number of city residents who remain outside the formal planning process. This leads to sub-optimal conditions for all modes of transport. An efficient bus system cannot be designed without taking care of the slow vehicles (non-motorized vehicles, NMVs) on the road. Since sustainable transport systems in Indian cities demand the movement of large number of people by bus transport and NMVs; planning for the latter is indispensable. Planning for non-motorized transport and integrating it with the other modes of city transport is a prerequisite for creating sustainable transport systems, thus leading to sustainable cities.

1.1.4 Infrastructure Service: Communication

[Stork, C., Kapugama, N., & Samarajiva, R. \(2018\). Economic impacts of mobile telecom in rural areas in low-and lower-middle-income countries: Findings of a systematic review. *Information Technologies & International Development*, 14, 191-208.](#)

Mobile phones have been the most rapidly adopted of all information and communication technologies. Understanding the impact of this technology on economic and productive outcomes in rural areas is of value to governments, international organizations, private companies, and non-governmental entities. This article presents a comprehensive analysis of their impact from a systematic review of the economic impact of mobile-phone interventions in improving economic, social, and productive outcomes in rural areas in low- and lower-middle-income countries for the period 2000–2014. The evidence of the impact on economic and productive outcomes in rural areas was strongest with regard to infrastructure interventions, wherein mobile network coverage reaches a population that previously lacked connectivity. Studies of access-device interventions, wherein mobile phones or SIM cards are bought by the user or are provided by a third party, and studies of content and application interventions did not yield conclusive findings.

[Sylvester, G. \(2016\). Use of mobile phones by the rural poor: Gender perspectives from selected Asian countries. IDRC, Ottawa, ON, CA.](#)

Mobile phones have been shown (though not uniformly) to contribute positively to rural development in many ways – from reducing information asymmetry, to improving functional networks, to increasing access to services and finance. This report uses empirical quantitative surveys and qualitative

fieldwork in a cross-section of economies in South and South East Asia (Bangladesh, India, Indonesia [Java only], Pakistan, Sri Lanka, and Thailand) to examine the digital gender divide among the poor in rural and urban settings.

[Zuhyle, S. & Lucas Gunaratne, R. \(2014\). The use of mobiles among low-income micro-entrepreneurs: A South Asian perspective. Available at SSRN 2487701.](#)

Low-income users in developing economies do not have access to a lot of formal services; however, most have access to a mobile phone. In fact, prior research confirms that the mobile phone is a valuable and often necessary tool for livelihoods of the poor, with a fair number of the low-income groups using the mobile phone for business or financial related activities. However, based on an empirical survey of 3180 urban low-income micro-entrepreneurs in Sri Lanka, India, and Bangladesh, there appears to be instances where users hesitate to consume certain services due to perceived hidden costs. There are also instances where they have found interactions with service providers to be challenging. This is a descriptive paper of a demand-side survey conducted in Sri Lanka, India, and Bangladesh of urban low-income micro-entrepreneurs and their use of mobile phones. It also captures a supply-side study of the mobile network operators in Sri Lanka and Bangladesh. The paper aims to provide recommendations that would bridge the gap in service delivery to the underserved population.

[Handapangoda, W. S., & Kumara, A. S. \(2013\). The world at her fingertips?: Examining the empowerment potential of mobile phones among poor housewives in Sri Lanka. *Gender, Technology and Development*, 17\(3\), 361-385.](#)

Over the past couple of decades, mobile phones have penetrated Sri Lanka at an unprecedented rate. The rate of adoption of cell phones in the country has been remarkably fast, and not gradual as in other nations. Yet, examination of the developmental impact of mobile phones has drawn surprisingly little attention in Sri Lanka. Therefore, this article attempts to investigate the empowering effect of mobile phones on dependent housewives in poor households of the country by using a mixed research method. Our research found that access to mobile phones was certainly empowering for these women: mobile phones unequivocally strengthened and expanded their social circle and support networks; they led them to domesticate technology, thus challenging negative societal attitudes toward women as technologically incompetent and timid; they reduced women's information poverty; and opened them up to a newer, non-traditional fun space, which was a clear manifestation of choice and power. However, the women's use of mobile phones was largely controlled within the household, mainly because they did not have their own income to maintain the phones, thus underlining the need for their financial autonomy. Those women who owned their mobile phones had more control over them than those who lacked legal ownership. To conclude, mobile phones can play a significant role in empowering poor women in Sri Lanka, and can be considered as a tool in the policy agenda for women's empowerment by the government.

[Baumüller, H. \(2012\). Facilitating agricultural technology adoption among the poor: The role of service delivery through mobile phones. ZEF Working Paper Series 93.](#)

The use of mobile phones in poverty reduction and development has ignited much interest over the past decade. To take advantage of the rapid expansion of mobile phones in developing countries, businesses, government agencies, and non-governmental organisations are increasingly turning their attention to the delivery of services through mobile phones in areas such as health, education, and agriculture. This paper examines how such m-services could be and are already being used to facilitate agricultural technology adoption among farmers in developing countries, including accessing, using,

and generating income from new technologies. The paper argues that m-services could help to overcome some of the obstacles to technology adoption by facilitating access to information and learning, financial services, and input and output markets. Existing studies assessing the impacts of mobile phones already point to the potential benefits for poverty reduction and rural development. However, there is a risk that the poorest and marginalised may fall behind. Further research is needed to understand how their particular challenges could be addressed through m-services and other support activities, and how they might become active players in the demand for m-services. Such research will need to draw on various disciplines to allow for an analysis of the economic, social, and biophysical dimensions of the users, farming contexts, and technologies.

[Sarin, A., & Jain, R. \(2009\). Effect of mobiles on socio-economic life of urban poor.](#)

Using a survey of 1774 users and non-users in 84 slums in three metropolitan cities (Delhi, Ahmedabad, and Kolkata), the research tries to understand the impact of mobile phones on their social and economic lives. Urban slum dwellers spend significant amounts on communications, both for a first-time acquisition of a handset and SIM (nearly 40% of the average household earnings per month), as well as on going expenditure. However, a majority of respondents believe that the use of mobiles has led to an improvement in their economic situation and that these benefits are greater than ownership and usage costs. Mobiles also appears to change how slum residents interact with each other. Despite reducing face-to-face interactions, mobile usage is associated with stronger social relationships. In comparing users and non-users, differences were found between users and non-users in terms of income, education, and other social characteristics. We also find evidence of hierarchies within households, with women far more likely than men to be infrequent mobile users or not to have access at all. While the cost of a handset is the primary barrier to owning a mobile, non-owners report difficulty in using a mobile, and lack of clarity of charges for call-plans and information dissemination as other barriers to ownership.

[Zainudeen, A. \(2008\). What do users at the bottom of the pyramid want? ICT infrastructure in emerging Asia: Policy and regulatory roadblocks, 39-59.](#)

At the bottom of the pyramid (BOP) extravagant spending, especially when it comes to non-essential goods or services, is out of the question. This chapter looks at the use of telecom by the user at the bottom of the pyramid. It looks at how these users communicate and what considerations and constraints shape their communication; it looks at what people use phones for, and tries to assess the value that people place on communication, based on the amounts that they spend, and how much they are willing to spend on communication. This chapter is the first of three chapters based on the findings of a quantitative study of users at the BOP in South Asia. One would expect to see a usage pattern that would reflect the given financial constraints, that is, minimal use and a very careful consideration of cost factors. This chapter finds that despite perceptions that telecom prices are high, those at the BOP are willing to spend significant amounts of their monthly household income on these services, especially on mobiles. They value these services for the convenience afforded in terms of time as well as money saved in travel, etc.

[Liyanage, H. \(2007\). NGO and community participation in setting up the Nanasala for targeting the poor and vulnerable and improving government accountability in Sri Lanka. *Regional Development Dialogue*, 27\(2\), 219.](#)

The eSriLanka initiative was designed to strengthen macro-scale gaps by setting both infrastructure and policy. Six major programmes try to build up the countrywide enabling ICT environment. Within it, Nanasala – the telecentre models of eSriLanka, were designed to build up rural ICT accessibility

across the country. In order to reach rural poor and vulnerable communities, the e-Society programme was designed to work through grassroots institutions. The overall programme design demonstrates a high emphasis to maintain equity and accountability by respecting the ethnic and cultural diversity of the country. The paper discusses in detail the pre- and post eSriLanka environment. Though it is currently premature to discuss the impact of eSriLanka while it was in the mid-implementation stages, the paper attempts to recognize the appropriateness of the design with special reference to NGO and community participation. It also tries to provide an insight into the innovative approaches made by eSriLanka by promoting multi-stakeholder partnerships between private-public and NGO sectors to reach the mega-goals of empowering citizens of Sri Lanka.

[de Silva, H., & Zainudeen, A. Teleuse on a Shoestring: Poverty Reduction Through Telecom Access at the “Bottom of the Pyramid”. \(2007\). Centre for Poverty Analysis Annual Symposium on Poverty Research, Sri Lanka, Colombo, December 6-7, 2007, Available at SSRN: https://ssrn.com/abstract=1555597 or http://dx.doi.org/10.2139/ssrn.1555597](https://ssrn.com/abstract=1555597)

Much has been said of the benefits of access to telecommunication especially at the “Bottom of the Pyramid” (BOP). The economic as well as social benefits from such access can, in theory, enable people to graduate from poverty and also contribute more widely to development. Thus, it can be argued that inequality in access to telecom services can lead to limitations in fighting poverty.

Many in the “ICT for development” movement highlight the benefits that telecommunication, the Internet and other information and communication technologies (broadly put, ICTs) can bring to the table in the fight against poverty. A number of studies have attempted to demonstrate the impacts of access on income at the macro-level. However, supporting evidence for these arguments at the household level is limited at best. This paper takes a unique look at telecom access and studies the perceived impacts of direct access to telecom services, that is, telephone ownership at a household level at the “Bottom of the Pyramid” in five developing Asian countries. It focuses on the perceived economic impact (positive or negative) of telecom ownership in terms of the potential to increase indirect income generation capacity or save on expenditure or transactions costs. The findings reveal that some telecom users do perceive the economic benefits of direct access to be high, but this finding is not seen across the board for a number of reasons explained.

The paper is based on a large sample survey of telecom users at the BOP in Pakistan, India, Sri Lanka, the Philippines and Thailand. Section 2 reviews the existing literature on the impacts of telecommunication. Section 3 explains the study design and methodology, and examines the difficulties faced in conducting a study of this nature and the methodological innovations undertaken. Section 4 explores in detail the impacts of telecom services at the BOP in the five countries. Section 5 concludes, looking at the policy implications from the study.

[Silva, N. S., & Abeysuriya, A. \(2006\). Telecom use on a shoestring: Expenditure and perceptions of costs amongst the financially constrained.](#)

It is often claimed that access to telecommunication facilities is a propeller of economic prosperity in developing countries. Mobile phones in particular are considered pivotal in encouraging growth. Prahalad (2004) asserts that defining change in the world’s poorest economies will be led by access to communications and not through the evolution of IT as was the case in the advanced countries of the world. A study by the London Business School has also found that, in a typical developing country, an increase of 10 mobile phones per 100 people would boost GDP growth by 0.6 percentage points (Waverman et al., 2005). However, despite the positive benefits of telephony, many people in developing nations are held back by a diverse set of factors – such as the lack of connectivity in rural

locations, duties and taxes imposed by governments, the costs of handsets, and the cost of services. Once the hurdle of access to communication is overcome, people in developing nations still have to contend with the costs of services. Usage costs can play a large role in determining the affordability of, purposes and the frequency with which people use phones. As Milne (2003) states, "although intuitively it is understood what affordability means, it is something that is difficult to define objectively, given 'variation[s] in people's needs as well as resources' and a 'poor correlation between affordability and acquisition'." Milne goes on to state that it is "widely accepted that basic telecoms should be affordable, but what this means in practice is rarely defined ([and] far less measured). Affordability is determined by, inter alia the ability to pay a price without suffering hardship and how badly the good or service being bought is needed. Recognizing the problems associated with defining "affordability," there is no doubt that the cost associated with using these services plays a role in this variable. Milne (2006; p.8) discerns two distinct levels of "affordability," or rather the lack of affordability. "The lack of affordability can be seen in terms of the 'barrier' effect, which prevents people from owning a phone, or from using shared access phones other than in emergencies," as well as the "'inhibitor' effect, which discourages people from making as many calls as they need to even when they own or have access to a phone." This study addresses the second level, looking at the "affordability" of telecom services, rather than that of acquiring a telephone; it examines perceptions of affordability amongst low-income telecommunication users based on a pilot study carried out in India and Sri Lanka in 2005. It also examines perceived changes in behaviour resulting from changing prices. Section 2 presents the background to the study and describes the methodology used. Section 3 examines the findings of the study, looking at the form of access (i.e., fixed, mobile or public access telephones), the benefits of telecom access for those studied, the expenditure on telecommunications and finally affordability of services and cost-related demand. Section 4 provides concluding remarks.

[Hartley, S. D., & Wirz, S. L. \(2002\). Development of a "communication disability model" and its implication on service delivery in low-income countries. *Social Science & Medicine*, 54\(10\), 1543-1557.](#)

This paper argues that higher priority should be given to the development of services which support people with communication disabilities in low-income countries and that these services should be different from those in other countries. Present services for this population group have poor coverage levels, tend to be centrally located, and are orientated to specialist services. The World Health Organisation (Health Programme Evaluation, Geneva, WHO, 1981) argues that health services should be based on meeting people's needs. This paper describes an analysis of "needs-related" qualitative data concerning people with communication disabilities and their families in two low-income countries and examines the results in relation to service development. The data was collected as part of five different studies concerning people with communication disabilities carried out in Uganda and Nigeria. Using the principles of established theory, these data helped develop a theoretical model. This model is compared with WHO's classification of Impairment Disability and Handicap ICDH-2 WHO (International Classification of Impairments Disabilities and Handicaps (ICIDH-2), a manual of classification relating to the consequences of diseases, Geneva, WHO, 1997a; 1999). Suggestions are made as to how this model might inform planning and practice from the perspective of the five major stakeholder groups: government and non-government organizations, people with communication disabilities, their families and professionals. Consideration is also given as to how this theory can be used to strengthen existing services, or encourage a complete paradigm shift, with the creation of different services in new and innovative ways.

[Kenny, C. \(2002\). Information and communication technologies for direct poverty alleviation: costs and benefits. *Development Policy Review*, 20\(2\), 141-157.](#)

Information and communications technologies (ICTs) are powerful tools for empowerment and income generation in developing countries. The cost-effectiveness of different ICTs does vary between developed and less developed countries, however. This article reviews the potential efficacy of radio, telephony, and the Internet as tools of direct poverty alleviation in the latter. While the requirements for their successful utilization make radio and telephone far more suitable technologies for the poor, traditional ICTs can act as a sustainable intermediary for them to gain indirect access to the power of the Internet. Governments should concentrate on opening up private and community provision of broadcasting and widening access to telephone services, so that they can effectively play this intermediary role.

[Kojina, M., Hoken, J., & Saito, M. \(1984\). The use of telephones in Sri Lanka. *Telecommunications Policy*, 8\(4\), 335-338.](#)

This article reports some findings from a survey designed to investigate the use of telephones in Sri Lanka, perceptions of the socioeconomic impact of telecommunications, and attitudes toward telecommunications policy. Although it was found that telephone subscription had significant impacts on social relations, social status and economic activity, the participants in the survey did not perceive any urgent need for investment in telecommunications.

1.1.5 Infrastructure Service: Electricity

[Jayasinghe, M., Selvanathan, E. A., & Selvanathan, S. \(2021\). Energy poverty in Sri Lanka. *Energy Economics*, 101, 105450.](#)

Understanding energy poverty is fundamental to any efforts to alleviate it. This paper, using the latest (2016) Sri Lankan Household Income and Expenditure survey data, examines the incidence, intensity, inequality, and determinants of energy poverty in Sri Lanka, by constructing the Multidimensional Energy Poverty Index (MEPI). The MEPI is calculated using a set of seven key indicators representing multiple dimensions of energy and assigning weights by using the Principal Component Analysis (PCA). Sri Lankan households, on average, are experiencing a moderate level of energy poverty (with an MEPI of 0.431) where the lack of access to modern cooking fuel is the largest contributor to energy poverty. The results of this study revealed notable differences in energy poverty by gender, age, ethnicity, and income group of the head of the household and by sub-national location of the household. Significant differences in inequality in energy poverty were also observed by sub-national location and income. While energy-poor households are not necessarily always income-poor, income and other socio-demographic and geographical factors are strongly associated with energy poverty in Sri Lanka. The findings of this study raise alarms for the possible adverse implications on the health and education attainment of the energy-poor. Overall, the results provide valuable policy insights into one of the most neglected dimensions of the post-war development policy agenda in Sri Lanka in particular and other developing countries in general.

[Kumareswaran, K., Rajapaksha, I., & Jayasinghe, G. Y. \(2021\). Energy poverty, occupant comfort, and wellbeing in internally displaced people's residences in Sri Lanka. *Energy and Buildings*, 236, 110760.](#)

Internally displaced people (IDP) due to conflict and violence were estimated at 41.3 million in 55 countries at the end of the year 2019, the highest figure ever recorded. Sri Lanka has not yet prioritized the health and well-being of households in building design, with the emerging "heat island effect" making lives more desperate for IDPs. This study focused on the effect of energy poverty on occupant comfort in determining the quality of life of people and adaptive behaviours to manage heat strain in

overheated interiors of rehabilitated residences in Jaffna, Sri Lanka. Field investigations consisted of personal monitoring, questionnaire surveying, and physical measurements in four clusters of rehabilitation residence programmes in four regions. The study found that IDPs were suffering from hidden energy poverty, with mean electricity consumption of 52 kWh per household per month. Residents have marginal (29%) access to clean fuels for cooking and are accountable for an abnormal particulate matter count of 360 951 particles per cubic centimetre. Findings explicitly revealed the presence of overheated spaces with a mean thermal preference of -0.6 conveying the need for a cooler indoor environment. People tend to exhibit behavioural adjustments to cope with prevailing extreme temperatures. The severity of heat stress informed by modified wet bulb globe temperature (WBGT) reports that 90% (28–31°C) of households face a higher risk of heat strain while the remaining 10% (>31 °C) are in a hazardous situation. The predicted mean vote (PMV) of 1.29 explains warm sensation with predicted percentage of dissatisfaction (PPD) 44.1% not complying with ASHRAE 55 standards. This detrimental combination of fuel poverty, lack of thermal comfort, and unacceptable indoor air quality has been a significant factor for 62% of the residences reporting at least one type of illness and being more prone to cardiovascular and respiratory disorders (37%). Thus, the study evidenced the presence of energy poverty and overheated interiors in the IDPs' residences in the hot tropics of Sri Lanka.

[Falchetta, G., Stevanato, N., Moner-Girona, M., Mazzoni, D., Colombo, E., & Hafner, M. \(2021\). The M-LED platform: advancing electricity demand assessment for communities living in energy poverty. *Environmental Research Letters*.](#)

The urban poor generally use low quality, inefficient and high-cost fuels to achieve low standards of energy service. Their fuel supplies are often precarious but they spend more of their income than others on fuels. Their reliance on wood fuels is often a major factor in deforestation and increasing wood fuel scarcity. The poor are usually trapped in these conditions by various factors such as inadequate distribution of modern and efficient fuels, the cost of equipment for using them, and dwelling conditions. Many policy options are available for removing these traps.

[Kumar, A., Ferdous, R., Luque-Ayala, A., McEwan, C., Power, M., Turner, B., & Bulkeley, H. \(2019\). Solar energy for all? Understanding the successes and shortfalls through a critical comparative assessment of Bangladesh, Brazil, India, Mozambique, Sri Lanka, and South Africa. *Energy Research & Social Science*, 48, 166-176.](#)

Lanterns, home systems, hot water systems, and micro-grids based on small-scale solar have become prominent ways to address the energy access challenge. As momentum grows for this form of energy transition this paper draws together research on small-scale solar in six different countries – Bangladesh, Brazil, India, Mozambique, Sri Lanka and South Africa – to argue for a need to understand how, when, and for whom solar provides energy access. It argues that an assemblage perspective can provide vital insights into the diversity and dynamism of energy access. The paper demonstrates that the diverse ways in which solar provides energy access are a function of the flexibility/fixity of the socio-technical assemblage and the de/centralization of agency.

The central thesis of this paper is that energy access is fluid and ever-changing and we need fluid, easily maintainable, locally modifiable “assemblages” for providing such access. Using this perspective, we find three common features of solar energy access across our case studies. First, there are significant gaps between what solar projects are designed to achieve and what they deliver, which are highly contingent on the flexibility of their structure and the decentralisation of agency within them. Second, access needs to endure continuously. Third, to foster enduring access, projects should embed logics of improvisation. This paper is based on six separate qualitative research projects

conducted during 2010–2016. It draws data from 482 interviews, 91 home tours and 12 group discussions.

[Masekameni, D. M., Kasangana, K. K., Makonese, T., & Mbonane, T. P. \(2018, April\). Dissemination of free basic electricity in low-income settlements. In 2018 International Conference on the Domestic Use of Energy \(DUE\) \(pp. 1-5\). IEEE.](#)

This paper evaluates the implementation of the Free Basic Electricity (FBE) programme in needy South African households. A total of four governmental sites were used to assess the implementation of the FBE programme, while 165 households were surveyed from 2016-2017 to determine the dissemination and use of FBE. The desktop survey revealed that approximately 1.8 million poor South Africans have access to FBE. Furthermore, tariff relief set at 50 kWh based on a 2001 household energy survey was found to differ per implementing agency, ranging from 20 kWh-100 kWh. However, no data was available regarding the total number of South Africans who are energy poor. The survey found that 18% of households are employed, while 82% are unemployed and mainly depend on social grants. The majority of the households cannot afford electricity for cooking and heating, consequently spending over 14% of their income on an energy budget which includes a mixture of modern and traditional fuels such as wood, coal and paraffin. A total of 15 (9%) of households are beneficiaries of the FBE; while 91% indicated that they do not know about the tariff relief. Findings from this study suggest the need for an improved public communication strategy, especially in rural areas. It can be recommended that the 50-kWh tariff relief be reviewed to qualify the current household energy needs. Furthermore, enhanced community engagement is recommended in rural settlements to improve clean energy adoption strategies.

[Mainali, B., Pachauri, S., Rao, N. D., & Silveira, S. \(2014\). Assessing rural energy sustainability in developing countries. *Energy for Sustainable Development*, 19, 15-28.](#)

Providing sustainable energy access is one of the most critical global challenges. This paper introduces a method for evaluating the status and progress of rural household energy sustainability in developing countries using a new composite indicator, the energy sustainability index (ESI). The ESI combines 13 techno-economic, environmental, and social indicators of sustainability using principal component analysis (PCA). ESI is applied to China, India, South Africa, Sri-Lanka, Bangladesh and Ghana between 1990 and 2010. The analysis suggests that South Africa's rural energy sustainability index is highest, followed by China, Sri Lanka, India, Bangladesh and Ghana respectively. All the countries' rural energy sustainability has improved over time except Ghana's. Improvements result mainly from increasing rural electricity use and increasing access to clean and efficient cooking fuels.

[Palit, Debajit. 2013. Solar energy programs for rural electrification: Experiences and lessons from South Asia. *Energy for Sustainable Development* 17\(3\), 270–79. doi: <https://doi.org/10.1016/j.esd.2013.01.002>.](#)

South Asia accounts for 37% of the world's population without access to electricity. Such a situation continues to exist despite several initiatives and policies to support rural electrification efforts by the respective country governments, including the use of renewable energy technologies. While conventional grid extension has been the predominant mode of electrification in the region, the countries have also extensively used solar photovoltaic (PV) technology for energy access. However, there have been implementation challenges including technical, financial, institutional, and governance barriers. This paper, based on an extensive literature review and survey of selected programmes, shares the experience and lessons of solar PV programmes for rural electrification in South Asia – both at the regional and country levels – and also presents a comparative analysis to

exploit the cross-learning potential. The paper suggests that output-focused approaches, financial innovations, bundling of projects for concentrating energy loads, adopting standard processes, and metrics, developing necessary infrastructure, and building local technical capacity are key to enhancing the effectiveness of the solar PV programmes.

[Hossain, M. S., & Saeki, C. \(2011\). Does electricity consumption panel Granger cause economic growth in South Asia? Evidence from Bangladesh, India, Iran, Nepal, Pakistan and Sri Lanka. *European Journal of Social Sciences*, 25\(3\), 316-328.](#)

This paper empirically examines the dynamic causal relationships between electricity consumption and economic growth for the panel of South Asian countries using time series data from 1971 to 2007. Another purpose of this paper is to find the short-run and long-run elasticities of economic growth with respect to electricity consumption for this panel. The four-panel unit root test results support that both the variables are integrated. The Johansen Fisher panel cointegration test results support that there is one cointegration vector. The Granger causality test results support the existence of unidirectional causality from economic growth to electricity consumption in India, Nepal and Pakistan, and from electricity consumption to economic growth in Bangladesh. No causal relationship is found in Iran and Sri Lanka. The panel Granger F-test results support that there is no evidence of a short-run causal relationship between the variables, but a long-run unidirectional causal relationship from electricity consumption to economic growth is found for this panel. The long-run elasticity of economic growth with respect to electricity consumption (0.5451) is higher than short-run elasticity of 0.3813. This means that over time, higher electricity consumption in South Asian countries gives rise to more economic growth.

[Laufer, D., & Schäfer, M. \(2011\). The implementation of Solar Home Systems as a poverty reduction strategy – A case study in Sri Lanka. *Energy for sustainable Development*, 15\(3\), 330-336.](#)

This paper focuses on the dissemination process and use of Solar Home Systems (SHS) in Sri Lanka. The introduction of this technology in remote rural areas of Sri Lanka is combined with the provision of micro-loans which allow potential users to finance these systems. An explorative empirical survey was conducted in Monaragala, one of the poorest districts of Sri Lanka, analysing the contribution of the implementation of SHS towards poverty reduction. The survey is based on qualitative interviews with 40 users of SHS and expert interviews with the main implementation actors in this field (e.g., the financing institution, developing engineers). The majority of the interviewed users highlighted the improved quality of life due to the availability of electricity, but also expressed discontent with the limited capacity of SHS and frequent functionality issues. Depending on their economic situations, different types of households vary in their capabilities to react to these limitations. Especially poor SHS users do not have the financial resources to replace inoperable equipment during the period of loan repayment. Access to electricity via SHS has not necessarily led to better productivity in agriculture or other productive sectors. The study concludes that robust technologies, adequate maintenance and financing strategies as well as embedding the provision of energy supply in broader regional development strategies are necessary for the implementation of SHS to effectively contribute towards poverty reduction in remote rural areas.

[Rajmohan, K., & Weerahewa, J. \(2007\). Household energy consumption patterns in Sri Lanka. *Sri Lankan Journal of Agricultural Economics*, 9\(1381-2016-115730\), 55-77.](#)

This study examines the pattern of household energy consumption among urban, rural, and estate sectors, over time and across income groups in Sri Lanka. The “energy ladder” hypothesis was tested and Engle functions were estimated using consumer finances and socio-economic survey data from

1978/79 to 2003/04. Results reveal that the energy ladder hypothesis holds for Sri Lanka and the country as a whole is moving towards modern fuels such as liquefied petroleum gas (LPG) and electricity. The urban sector proceeds much faster than the rural sector. Engle functions estimated for individual fuels and for different sectors reveal that the budget elasticity values were negative for firewood and kerosene, in the urban and estate sectors, indicating that they are inferior goods. LPG and electricity had positive budget elasticities indicating that they are normal goods. Budget elasticities estimated for the estate sector were insignificant, eliciting that factors other than income influence fuel consumption decisions.

[Thomas, Steve. & Gunasekara, Jayantha. & Rajepakse, Ruana. \(2005\). *Turning off the lights : the threat to community electricity in Sri Lanka*. Bourton-on-Dunsmore, Rugby : ITDG, <http://www.loc.gov/catdir/toc/fy0606/2006373914.html>](http://www.loc.gov/catdir/toc/fy0606/2006373914.html)

The World Trade Organization's General Agreement on Trade in Services (GATS) could threaten services and projects specifically aimed at or managed by poor communities. This book explains the nature of that threat, taking community-run electricity schemes in Sri Lanka as an example. It will help galvanize support for a pro-poor agenda in future negotiations by illustrating the dangers if the concerns of poor communities are not considered. Twenty years of privatization and liberalization have weakened poor communities throughout the developing world, while strengthening business and the private sector. Civil society groups and service user groups have struggled to ensure that their legitimate concerns are heard. Now international pressure through the General Agreement on Trade in Services (GATS) negotiations could threaten the survival of even those projects which have focused on poor communities, such as off-grid micro-hydro power schemes which are widespread in Sri Lanka. This book explains the background to the GATS negotiations and the international context across the globe, and looks in detail at the case of Sri Lanka, just embarking on the liberalization of its electricity sector. *Turning Off the Lights* will provide valuable ammunition to campaigners for a fairer approach to GATS, and to energy policy planners and researchers.

[Wijayatunga, P. D., & Attalage, R. A. \(2003\). *Analysis of rural household energy supplies in Sri Lanka: energy efficiency, fuel switching and barriers to expansion*. *Energy Conversion and Management*, 44\(7\), 1123-1130.](#)

A majority of the households in Sri Lanka, as in the case of many developing countries, is concentrated in the rural areas of the country. Unfortunately, very little attention has been paid until recently to analyse and address various issues associated with rural energy supplies, particularly those issues regarding barriers to penetration of clean and convenient sources of energy. This paper presents the results and analysis of a study conducted through a sample study on domestic energy supplies in rural Sri Lanka with emphasis on cooking and lighting energy requirements. The paper has attempted to highlight policy issues associated with rural energy supplies and possible solutions to them in the context of the country's overall picture of the energy sector.

[Stern, J. \(2000\). *Electricity and telecommunications regulatory institutions in small and developing countries*. *Utilities Policy*, 9\(3\), 131-157.](#)

The spread of utility liberalization and privatization to middle and low-income developing countries raises the problem of whether and how they can establish an effective regulatory capability or whether the supply of regulatory services is likely to be insufficient. The paper presents evidence on the size of electricity regulatory agencies in 24 mainly middle- and lower-income countries as well as the number of high-level, specialist regulatory staff and the potential resource pool from post-school education. The paper also discusses how far the problem can be alleviated and/or avoided by the use

of regulation by contract, regulation by multi-national regulatory agency, or contracting-out. The paper concludes that such solutions are unlikely to be generally effective but that informal exchanges of information and pooling of resources between national regulators on a market-driven basis, as seen in Southern Africa and the EU, is a promising option. The paper concludes by pointing to the need to ascertain the minimum required regulatory capability in developing countries as perceived by governments and potential investors.

[Davis, M. \(1995\). Electricity consumption growth in newly electrified settlements.](#)

Eskom embarked on its electrification programme in 1991. Since then, over one million new connections have been made, at a cost of R2.25 billion in capital investment. As is well known, connection and tariff policies have been to charge a nominal connection fee and to attempt to recover the cost of the investment through the tariff, consisting of only an energy charge. This practice has been closely associated with the use of electronic prepayment meters which were introduced to simplify and secure revenue collection and to provide a metering system whereby consumers can monitor and regulate their consumption. Given these connections and tariff policies, Eskom's rate of return on investment is sensitive to five critical variables: the cost per connection, support costs, consumption, revenue losses, and tariff levels. Given a rate of return requirement and assumptions regarding the first four variables, it is a simple procedure to calculate the required tariff level. Average capital costs to date have been in the region of R3 000 per connection, and with present tariffs and other supply and maintenance costs, this means that average consumption levels must be over 350 kWh per month in order to achieve Eskom's required nominal financial return of 17.8% (the real discount rate used is 6%). At the start of the electrification programme, average consumption was predicted to reach 525 kWh/month in urban areas and 350 kWh/month in rural areas within three years of connection. To date, average sales have been way below these initial estimates and have been in the order of 80 kWh/month. Although consumption levels are expected to grow over time, there is no certainty regarding growth rates. The picture is also complicated by excessive revenue loss through theft and meter failures. Although it is widely considered that most of the technical problems associated with the earlier models of prepayment meters have now been solved, there continue to be high levels of "non-technical" losses. Calculations of the financial impact of electrification on utilities are sensitive to estimates of consumption growth and the extent to which losses can be controlled. In addition, Eskom has raised over R1.7 billion through the issue of Electrification Participation Notes (EPNs), special financial instruments where the return is related to consumption growth. Although the conditions of EPNs were modified to remove the effect of losses (returns were made dependent on consumption rather than sales), Eskom's investors have a direct interest in monitoring consumption growth. The importance of monitoring consumption and demand growth is emphasized by the growing significance of newly electrified households in Eskom's consumption profile. These customers now account for 5% of Eskom's total electricity generated and 9% of peak demand. As electrification progresses, and as average consumption rates grow over time, the size and importance (in load terms) of this section of Eskom's customer base will further increase. This document reports on an analysis of electricity consumption growth in newly electrified settlements, including a review of other work and a focus on predominantly rural areas in the country.

[Ulluwishewa, R. \(1989\). A case study of energy use for domestic cooking by urban dwellers in Colombo City. *Energy* 14\(6\), 341–43. doi: 10.1016/0360-5442\(89\)90015-7.](#)

The research findings show that the predominant types of energy used for cooking by urban dwellers in Colombo vary with income range: low-income groups use relatively more firewood, middle-income groups kerosene, electricity and LP gas, and high-income groups only LP gas and electricity. This use pattern is attributed to the cost of equipment, price of energy, convenience in use, and cleanliness.

The urban poor use purchased firewood, which is the most inefficient, most costly, and most inconvenient energy source. They spent a greater income share on energy purchases for cooking than other income groups, and would be the primary beneficiaries of improved stoves, increased firewood supplies and low-cost alternative energy sources.

1.2 Housing Policy, City Planning and Governance

[Gunasekara, V. \(2021\). Crises in the Sri Lankan economy: Need for national planning and political stability. NUS Institute of South Asian Studies \(ISAS\). https://www.isas.nus.edu.sg/papers/crises-in-the-sri-lankan-economy-need-for-national-planning-and-political-stability/.](https://www.isas.nus.edu.sg/papers/crises-in-the-sri-lankan-economy-need-for-national-planning-and-political-stability/)

Sri Lanka's current economic quagmire is due to three overlapping economic crises: a meshing of another long-drawn-out global capitalist bust phase (which commenced with the 2007 financial collapse); a domestic economic crisis that has been unfolding since the country's 1948 "Independence" and the COVID-19 pandemic, which has affected both global and national supply chains. This paper attempts to tease out the domestic economic crisis, touching upon key areas where the current imperilment is most visible. It does acknowledge that, despite the economic downturn, Sri Lanka has been resilient in many ways, particularly in such areas as food production, logistics, construction, and infrastructure development, particularly in the face of a global pandemic. The paper argues for the urgent need for national planning and policy stability in Sri Lanka, while offering a few broad points for consideration in this regard.

[International Water Management Institute. \(2020\). "Leaving something behind" – Migration governance and agricultural & rural change in "home" communities: Comparative experience from Europe, Asia and Africa. AGRUMIG. \(https://agrumig.iwmi.org/\).](https://agrumig.iwmi.org/)

Unprecedented levels of migration in today's globalized economy are dramatically reshaping social, economic and political landscapes in sending and receiving countries. For policymakers and practitioners, understanding and responding effectively to such rapid transformation is a pressing issue. To date, communities facing socio-demographic transformation due to labour outflows have received less attention. AGRUMIG research focuses on these "sending communities" in low- and middle-income countries, with a particular focus on transformations taking place in the agrarian sector.

[Munasinghe, H. \(2019\). Facilitating urban underserved dwellers and a paradigm shift in real estate development in Sri Lanka: The case of Colombo. In Real Estate in South Asia \(pp. 301-314\). Routledge.](#)

Uneven urbanization in the developing city has triggered major challenges by bringing in new citizens of various backgrounds. The statistics of 1981 revealed that more than one-third of urban housing in Colombo was semi-permanent or improvised without sufficient access to water and sanitation facilities. Investing in the existing communities and strengthening their economic landscapes could boost the real estate values of the city as a whole. Using typical indexes such as growth rate or average family sizes cannot be justified for underserved settlements as most of them have their extended family members living with them time-to-time. Every community is an asset and its value is composed of the strengths of its members. The concept of ecological footprints also suggests that high-rises occupy larger footprints and are not sustainable. The need to move away from city marketing to a more endogenous strategy that evolves with the place and said assets is as such neglected.

[Jayatilaka, Danesh. \(2018\). Labour management issues and practices in Sri Lanka. A study among urban, rural and plantation sector projects \(Unpublished\).](#)

The three objectives of the study were to: (i) Carry out a review of Sri Lanka's labour laws and policies to assess compliance with the requirements under the World Bank's Environment and Social Framework (ESF), especially Environmental and Social Standards (ESS) 2 on Labour and Working Conditions, and ESS 4 on Community Health and Safety. (ii) Examine the existing labour management conditions and practices in select World Bank-supported projects in Sri Lanka, focusing on issues relating to labour influx, GBV, child labour, disability, forced labour, and trafficking for labour, to identify possible gaps as well as implementation challenges in relation to the ESF requirements. (iii) Provide recommendations for effective implementation of labour standards as identified under the ESF and the strengthening of labour management systems in Bank-supported projects. It was decided to study two sub-projects from each, totalling a sample of six projects in urban, rural, and plantation sectors.

[Kempin Reuter, T. \(2019\). Human rights and the city: Including marginalized communities in urban development and smart cities. *Journal of Human Rights*, 18\(4\), 382-402.](#)

The idea that the city belongs to all individuals inhabiting the urban space is grounded in the Universal Declaration of Human Rights and the New Urban Agenda, and it is referred to as "right to the city" or "rights in the city." This article discusses how human rights relate to the city and its inhabitants, examines the meaning of the right to the city and human rights in the city in today's urban environment, and deliberates how to transform cities into spaces that reflect fundamental human rights principles. By looking at the situation of marginalized groups in cities, the article focuses on the questions of how to build inclusive, fair, and accessible cities and how to eliminate inequalities seen in urban communities. Because technology is often cited as one way to foster integration of marginalized communities, special attention will be given to the smart city and the opportunities and challenges presented by information and communication technologies (ICTs) for human rights, accessibility, and inclusion. Using a case of persons with disabilities as an illustration, the article argues that urban development needs to be fundamentally transformed to live up to human rights standards. Only a multi-stakeholder urban design process will produce truly inclusive urban spaces that fulfil the right to the city.

[Anon. \(2019\). Government Infrastructure Projects Advance Sri Lanka's Construction Sector. *Oxford Business Group*.](#)

While the construction sector in Sri Lanka witnessed substantial growth in the 24 months leading up to 2018, domestic market forces including a falling rupee, warnings of an asset bubble, and political instability have stymied growth of late. However, despite market disruptions, a number of key projects forged ahead in 2018, including the Port City Colombo and the Hambantota Industrial Zone. While the Sri Lankan landscape continues to be altered by new developments, the industry remains shackled by a cumbersome approvals process and a lack of skilled labour. On top of these shortcomings, heavy taxation on construction materials and hefty land prices weigh heavily on profit margins. Nevertheless, despite a number of considerable challenges, there are reasons to be optimistic as major infrastructure projects gather pace.

[UCL. \(2018\). Grounded development: Reflections on community-based practices in Sri Lanka and Myanmar. *The Bartlett Development Planning Unit*.](#)

This publication documents and demonstrates some of the work that the two organizations are doing and articulates this work in the context of people-centred, community-based practices. A comparative

understanding can help expand on the tools and methodologies of community-based practices and enable a platform for institutional cross-learning and dissemination. This is also an opportunity to reflect on the larger issue of the role such community-based practices play in shaping trajectories of development that are grounded in the realities of a place, are inclusive, and just. Finally, this publication presents an opportunity for the interns to articulate and share experiences, learnings, and reflections amongst each other, with young practitioners and also a wider audience. This can contribute to the body of knowledge already created and highlight the roles, responsibilities, challenges of development practice in the context of prevalent socio-spatial realities.

[The United Nations Conference on Housing and Sustainable Urban Development. \(2017\). "The New Urban Agenda." Habitat III.](#)

The New Urban Agenda was adopted at the United Nations Conference on Housing and Sustainable Urban Development (Habitat III) in Quito, Ecuador, on 20 October 2016. It was endorsed by the United Nations General Assembly at its sixty-eighth plenary meeting of the seventy-first session on 23 December 2016. The New Urban Agenda represents a shared vision for a better and more sustainable future. If well-planned and well-managed, urbanization can be a powerful tool for sustainable development for both developing and developed countries.

[United Nations. \(2016\). Leaving no one behind – The imperative of inclusive development, ST/ESA/362](#)

Humankind has achieved unprecedented social progress over the past several decades. Poverty has declined dramatically around the world and people are healthier, more educated, and better connected than ever before. However, this progress has been uneven. Social and economic inequalities persist and, in many cases, have worsened. Virtually everywhere, some individuals and groups confront barriers that prevent them from fully participating in economic, social, and political life. Against this backdrop, inclusiveness and shared prosperity have emerged as core aspirations of the 2030 Agenda for Sustainable Development. A central pledge contained in the 2030 Agenda is to ensure that no one will be left behind and to see all goals and targets met for all nations, peoples, and for all parts of society, endeavouring to reach the furthest behind first. The focus of the 2030 Agenda on inclusiveness underscores the need to identify who is being left behind and in what ways. This is what the Report on the World Social Situation 2016 sets out to do. Specifically, the report contains an examination of the patterns of social exclusion and consideration of whether development processes have been inclusive, with particular attention paid to the links between exclusion, poverty, and employment trends. Key challenges to social inclusion are highlighted along with policy imperatives to promote it. It is recognized in the report that promoting inclusion will take time and political determination. Raising awareness about the consequences of leaving some people behind and recommending actions that governments can take to avoid doing so can help generate political will.

[Yap, K. S. \(2016\). The enabling strategy and its discontent: Low-income housing policies and practices in Asia. Habitat International, 54, 166-172.](#)

Over the past few decades, Asia's urbanization has been driven by rapid economic growth, while also making economic growth possible. These developments have allowed millions of people to escape income poverty and led to the emergence of an expanding middle class. Its ambition for home ownership and its paying capacity, reinforced by a vibrant housing finance sector and supported by enabling housing policies, have motivated private-sector real estate developers to supply housing affordable for large sections of the urban population. This has improved housing conditions in urban areas. However, like elsewhere, free-market economic policies have also resulted in growing income and access inequalities between those with the entrepreneurial spirit, knowledge and skills to seize

new economic opportunities, and those who, for various reasons, have not been able to do so. So, despite economic growth, the demand for informal housing has not declined. At the same time, globalization and foreign direct investments have increased development pressure on urban land, as investors see real estate as a safe investment.

The housing problems of the urban low-income population cannot be solved unless the urban poor have access to urban land, but this requires urban planning and government intervention in the urban land market. Most governments are unwilling to do this, as it runs counter to their free-market economic policies. Urban planning, within a free-market economy, is critical, not only to address the low-income housing shortage, but also the impacts of climate change, two issues which converge in the future of informal settlements in the disaster-prone coastal areas of the Asia-Pacific region.

[Samaratunga, T. and Hare, D. \(2013\). Reflections on over 100 Years of urban housing policies in Sri Lanka. *Social Sciences*, 2\(1\), 14-21.](#)

This research paper evaluates the urban housing policies in Sri Lanka and related housing programmes introduced by the various governments over the last 100 years. Housing and housing policies have been hot political issues throughout this history. The Sri Lankan government's housing policies are a series of legislative and administrative measures that have a bearing either directly or indirectly on the provision of housing in Sri Lanka. Housing policies in Sri Lanka can be divided into two major segments: urban housing policies and rural housing policies. Sri Lankan urban housing policy and its origin can be divided into three stages: prior to independence from British rule (before 1948); after political independence and during the civil war (1948–2008); and the contemporary situation after the end of the 30-year civil war (2009 onwards). This research paper critically evaluates past and present Sri Lankan government urban housing policies for low-income people and policy changes towards high rise high-density low-income housing (public housing) as an appropriate solution for slums and shanties in Colombo.

[Seymoar, N. K., Ballantyne, E., & Pearson, C. J. \(2010\). Empowering residents and improving governance in low-income communities through urban greening. *International Journal of Agricultural Sustainability*, 8\(1-2\), 26-39.](#)

This paper describes the objectives, process, and outcomes of three urban greening projects and how they contributed to sustainable development. The first two were conducted in low-income communities in Bangkok, Thailand, and in Badulla, Matale, and Moratuwa, Sri Lanka. The lessons from these two projects were then incorporated in a post-tsunami project in Moratuwa and Matara, Sri Lanka. In addition to achieving urban greening objectives, the projects developed and validated a conceptual framework of sustainable community development (Four-Directional Framework) using participatory action research. This framework facilitated rapid community learning and development objectives such as urban greening and consequential poverty reduction, empowerment of women, and improvements to the environment. Urban greening, incorporating urban agriculture, was an effective tool to improve the relationship between local authorities and the residents of marginalized and low-income communities and build a foundation for continuing sustainable development initiatives and city-to-city learning.

[Joshi, S. & Sohail Khan, M. \(2009\). Aided self-help: the Million Houses Programme - revisiting the issues. *Habitat International*, 34 \(3\), 306-314.](#)

The self-help approach to housing aims at creating an enabling environment. An environment in which occupants of a piece of land, especially the poor, build their affordable houses fulfilling their current needs and progressively expand and/or improve the house to meet their changing needs. The Million

Houses Programme in Sri Lanka “aided” self-help incorporated participation in decision-making, support for planning, design, construction, and financing. The project further expanded to enhance skills of settlement residents for taking-up community contracts for construction of community assets. Currently when relocation of slum dwellers in built-housing is becoming the preferred option, this article very briefly revisited the lessons learnt and the lessons that could still be learned from the experience of the Million Houses Programme and of the “People’s Process”. It argues that an “enabling environment” for increasing access to housing involves multi-pronged support through facilitators. The experience of the Million Houses Programme offers insights, even now, into effective strategies for aided self-help housing.

[Komives, K., Foster, V., Halpern, J., Wodon, Q., & Abdullah, R. \(2008\). Water, electricity, and the poor: who benefits from utility subsidies?](#)

Utility subsidies to consumers of water and electricity services are often justified as a mechanism for making services affordable for the poor. After all, an estimated 1.1 billion people in the developing world lack access to safe water, 2 billion are without electricity, and 2.4 billion without sanitation. But critics object that such subsidies can work against improving quality of service to existing consumers and extending access to unconnected households. Financially strapped utilities are often inefficient, provide low-quality services, and lag behind in expanding networks. During the 1990s, experts urged that water and electricity services should charge enough to fully cover costs. Households could spend 10-50 percent more on water and electricity without major effects on poverty levels, but in many countries much larger price increases are needed to recover costs. A substantial proportion of the population of lower income countries may find it difficult to pay the full cost of services.

[Wickrema, M. \(2006\). Movin’ on up: Mainstreaming under-serviced urban communities in Colombo, Sri Lanka.](#)

This thesis offers an early look at a radical shift in Sri Lankan urban housing policy regarding slums in the capital city of Colombo. During the 1980s, the Sri Lankan government achieved widespread urban improvements by mobilizing community-led on-site slum upgrading. However, since the late 1990s, the government has attempted to persuade urban slum dwellers to relocate to nearby high-rise apartments and, thus, reclaim public land inhabited by low-income settlements in central Colombo city. This policy shift is surprising because: (1) Sri Lanka's previous 10-year slum upgrading programme was described as “best practice” by donor agencies, and (2) most other countries have rejected the notion of high-rise for low-income city dwellers. Concurrent shifts in donor agency ideology and preconditions as well as overcrowded physical conditions in previously upgraded under-served settlements drove the government to seek new approaches to improve the lives of the urban poor. Moreover, beginning in the 1990s, there was a renewed perception that cities like Colombo needed to capitalize on its comparative advantages vis-à-vis the rest of the region in order to spur economic growth in the nation. The Sustainable Townships Programme (STP) and its pilot project, the Sahaspura apartment complex, with its parallel attempts to free up land for development and resettle slum dwellers in modern high-rise apartments, were part of the drive to remain competitive in the global and regional economy. Prevailing thought maintains that relocation and high-rise housing will adversely affect the social networks and informal livelihood patterns of slum dwellers.

[Ariyawansa, R. G. \(2006\). Housing for the poor and land for the city development: A case of the Sustainable Township Program in the city of Colombo, Sri Lanka. India: International Conference on Urban Poverty.](#)

The aim of this paper is to evaluate the rate of the success of the development strategy in the city of Colombo called the “Sustainable Township Programme” (STP), which has dual expectations as to provide homes for the poor and land for the development of the city. In fact, large cities are centres for many economic activities, which attract outsiders for various purposes such as education, better infrastructure, employment, and so on. The UN has estimated that urban population in Asian and African countries will increase from 30% -35% to 54% by 2025. This clearly highlights the need for rapid economic development in urban areas to fulfil needs of such cities. In this context, these cities face a fundamental problem of efficient and effective land management. The “STP” was implemented in Colombo to provide home for its 50% of households who are in under-served settlements by re-housing all in modern “Compact-Townships” and thereby to liberate lands for other urban developments. Necessary capital for construction of townships is supposed to be found by selling of liberalized land in the market. The first phase of the programme has been already completed. The degree of success of the completed phase is, in fact, a crucial determinant for the implementation of the next phases. This study examined two factors in this regard as “cost recovery” and “households’ satisfaction” using primary and secondary data. Twenty percent of the households were interviewed using a structured questionnaire. The data was descriptively analysed. It was identified that the cost recovery is fairly successful though it is under heavy constraints due to market inefficiencies. However, the households’ satisfaction is very poor. The overall satisfaction of interviewed households is very low. Therefore, it is clear that achieving the willingness of the target households has become a greater challenge than the cost recovery.

[Nunan, F., & Satterthwaite, D. \(2001\). The influence of governance on the provision of urban environmental infrastructure and services for low-income groups. *International Planning Studies*, 6\(4\), 409-426.](#)

This paper describes the inadequacies in the provision for water, sanitation, and solid waste collection in nine cities in Africa, Asia, and Latin America and discusses the main explanatory factors. These include the quality and capacity of each city's local government, and the nature of its relationship with citizen groups and non-governmental organizations within the city and with governments at provincial/state or national levels. The paper highlights the many political constraints to ensuring healthier living and working environments for lower-income groups, including those rooted in local government structures and perceptions, as well as those related to low per capita incomes and poor economic performance.

[Premakumara, D. G. J. \(1994\). Community contract system in Sri Lanka: A sustainable approach for infrastructure provision in poor urban communities. *Evolution*, 1\(10\).](#)

Although national and international agencies have put greater effort to provide basic infrastructure services to low-income settlements during last few years, the urban poor have remained beyond the reach of infrastructure and services. Today, many developing countries are taking initiatives to introduce alternative systems to meet this challenge. One of the initiatives being employed by the National Housing Development Authority (NHDA) in Sri Lanka is the Community Contract System. Under this new procurement system, the NHDA accepted the Community Development Councils (CDC) – local residential committees in the low-income settlements – as possible contractors, similar to commercial contractors, to award small contracts for building infrastructure services in their own neighbourhoods. The CDC, with technical assistance from the NHDA, identified sub-projects, priorities;

approved engineering designs, cost estimates; and executed the construction works hiring skilled and unskilled laborers from within the same community. However, the idea that local communities construct infrastructure and operate and maintain the services is not yet generally accepted principles, despite little experiments in different parts of the developing world. The paper therefore reviews the experience of 127 community contracts implemented by the low-income communities in Colombo relative to the 2,504 conventional tender contracts carried out by the commercial contractors and the Works Department of the Colombo Municipal Council (CDC) in the low-income settlements in Colombo, and concludes that within certain conditions, community contract system can perform better than the conventional contract system in providing infrastructure services to low-income communities. The data was obtained from both primary and secondary sources following a literature review, documentary observation, focused group discussions, and key informants' interviews, and comprised a case study analysis.

2) Evictability and Tenure Security

[Gunasekera, V. \(2021\). Women and Land in Sri Lanka: A Literature Review.](#)

This literature review is a comprehensive exploration of the history of land tenure in Sri Lanka, recent changes to land tenure, and the significance of land ownership from a gender perspective. For Sri Lanka, being an agrarian country, land has always been a source of sustenance and socio-economic and political leverage, and is closely tied to one's identity and belongingness to home. With the colonial influences, the legal ownership of land became more important for both the State and its people, and the more recent land settlements, land reforms, and conflicts over land are significant milestones in the history of land in Sri Lanka. Laws and customs related to inheritance and ownership of land in Sri Lanka are mainly governed by three forms of customary laws, namely Kandyan law of the Kandyan Sinhalese, Tesavalamai of the Jaffna Tamils, and Muslim law of all the Muslims, and the general law of the country. The historical patterns of land tenure, colonial influences, customary laws, and more recent land reforms are important in understanding the current contexts and patterns of inheritance, ownership, and control of land by women in Sri Lanka. This literature review takes a critical look at how women's access to land has both deteriorated and improved over time and provides insights into the case of women and land in contemporary Sri Lanka.

[IDMC. \(2021\). Global Report on Internal Displacement. ReliefWeb.](#)

IDMC's Global Report on Internal Displacement is the official repository of data and analysis on internal displacement. This year's GRID discusses the relationship between climate change, disasters and displacement, and presents good practices from across the globe in advancing policy, displacement risk reduction, and effective response. Part 1 – Internal displacement in 2020 – presents updated data and analysis of internal displacement at the global level. Data and contextual updates are included in the regional overviews and country spotlights. Part 2 – Internal displacement in a changing climate – discusses the importance of sound evidence and promising approaches to addressing disaster displacement and reducing the negative impacts of climate change on IDPs.

[Sarmiento, J. P., Sandoval, V., & Jerath, M. \(2020\). The influence of land tenure and dwelling occupancy on disaster risk reduction. The case of eight informal settlements in six Latin American and Caribbean countries. *Progress in Disaster Science*, 5, 100054.](#)

This study seeks to understand how land tenure security and dwelling occupancy modes influence disaster risk reduction in precarious urban communities. It conducted a comprehensive review of

recent publications on the relationship between land tenure security, access to credit, housing improvements, and the expected outcome: safer housing and thus risk reduction. The study used a database of surveys from a previous study conducted by the authors in eight informal settlements across six Latin American and Caribbean countries in 2017-2018. Bivariate correlation and Point-Biserial correlation analyses were conducted, using the stepwise variable selection for all regressions. This study assessed whether dwelling occupancy mode and land tenure situation predict the changes in disaster risk factors such as dwellings' physical conditions and occupants' social conditions.

Our extensive literature review reveals: (1) securing housing occupancy alone does not automatically address the issue of credit access, nor does it result in house improvement that leads to safer housing, and (2) households with land tenure or occupancy issues that are exposed to natural hazards are frequently excluded from aid distribution and post-disaster reconstruction programmes which increases their vulnerability to future disasters. Our statistical analysis found a positive relationship between consolidated mode of occupancy and land tenure with disaster risk factors associated with housing conditions, particularly access to utilities (i.e., water, sewage, and energy). Our study is the result of a systematic process framed within an evidence-based DRR evaluation strategy that brings forth the scope of measures to secure land tenure conditions and consolidate house occupancy modes as means to improve safety and quality of life in informal settlements that ultimately influence the susceptibility of communities to the impacts of natural hazards.

[Masum, F. \(2018, June\). Participation of informal settlers in participatory land use planning project in pursuit of tenure security. *Urban Forum* \(Vol. 29, No. 2, pp. 169-184\). Springer Netherlands.](#)

A majority of the urban population in Dar es Salaam City in Tanzania lives in informal (unplanned) settlements. The living conditions in these settlements lack, among other things, security of tenure. In response to the growing need for tenure security, the Government of the United Republic of Tanzania adopted participatory land use planning (PLUP) approaches to help local people secure rights over land and to strengthen the local management of institutions. However, the PLUP approaches often are subverted by inadequate participation of the local community. By way of a methodology, the study evaluates the PLUP project under the Business and Property Formalization Programme (MKURABITA) towards enhancing tenure security of informal settlers in the Baruti informal settlement in Dar-es-Salaam. The research examines the perception of informal settlers in the PLUP project and their level of participation in the PLUP process. Based on research findings, the researchers suggest a strategic and collaborative framework to have a lasting and sustainable impact of the PLUP approach towards improving land tenure security. This research will help scholars and practitioners to understand the current state of the literature in participatory land use planning for improving tenure security. This case study as an example will shed the light on means that can be utilized in improving the level of participation of informal settlers in the PLUP process.

[Uwayezu, E., & De Vries, W. T. \(2018\). Indicators for measuring spatial justice and land tenure security for poor and low-income urban dwellers. *Land*, 7\(3\), 84.](#)

There exist various indicators that measure land tenure security for urbanites. Most of those indicators measure the degree to which land titling promotes the security of tenure. Based on the reviewed literature, it is admitted that land titling is not a panacea to land tenure security. Measuring the degree of land tenure security should not rely only on the legalisation of land ownership. This paper makes a meta-analysis and conceptual modelling to connect spatial justice and land tenure security. It discusses the potential of inclusive urban development grounded on the claim that spatial justice enhances land tenure security. A comprehensive framework of indicators which can measure the degree of land tenure security from a spatial justice lens is thereafter derived. The meta-analysis and

conceptual modelling were coupled with research synthesis to perform an in-depth review and qualitative content analysis of the literature on concepts of spatial justice, land tenure security, and urban (re)development processes. This study proposes 60 indicators which measure the degree of spatial justice and land tenure security along a continuum of spatial justice and land tenure security. Those indicators provide a more holistic approach to measuring land tenure security from a spatial justice lens than the separated sets of existing indicators.

[Paranage, K. \(2018\). The consequences of restricting rights to land: understanding the impact of state-land tenure policies in Sri Lanka, *Sustainability: Science, Practice and Policy*, 14\(1\), 46-54, DOI: 10.1080/15487733.2018.1545556](#)

Land tenure can be defined as the mode by which real property is held or owned, or the set of relationships among people concerning land. Understanding land-tenure systems has been key to achieving sustainable development because the terms of these arrangements structure the connection that people have with their lands, influencing what they do with it and how they treat it. Using a two-stage mixed-method design based on scenarios drawn from Sri Lanka, this article demonstrates that affecting control over land tenure and land rights does not always lead to predictable outcomes. Policy interventions often lead to the creation of new and unintended categories of relations between people and the land that run counter to original intentions. The research also demonstrates that relationships to land cannot be adequately captured by looking at legal rights, but rather requires identifying how people perceive or interpret them.

[Azmi, F. \(2017\). Negotiating housing in a heritage city: A study of Mahayyawa low-income settlement in Kandy, Sri Lanka. *Trends and Issues in Housing in Asia* \(pp. 209-231\). Routledge India.](#)

Against the broader context of economic and political changes in Sri Lanka, this chapter seeks to investigate how the urban poor living in low-income settlements in Kandy negotiate their housing needs. The areas of negotiation in respect of housing quality, quantity, tenure, and basic infrastructure are investigated in conjunction with the range of policy and legislative structures enabling or constraining their access to better housing. This micro-level qualitative study of the Mahayyawa low-income settlement in Kandy also focuses on the varying ability of the urban poor to solve their housing problems. It is foregrounded on a discussion of the broader changes that are occurring in the housing sector in Sri Lanka and the roles of the state and the private sector in housing provision.

Centre for Policy Alternatives. (2017). *The making of a world class city: displacement & land acquisition in Colombo*.

This report explores the process of making Colombo a world class city, begun post-war under the Rajapaksa regime and its continuity under the Yahapalanaya government. The luxury spaces being developed and the lifestyles being promised, however, hide the heavy price that the working-class poor continues to pay, as well as raises serious questions about the acquisition of land for development.

[Collyer, M., Amirthalingam, K., & Jayatilaka, D. \(2017\). The right to adequate housing following forced evictions in post-conflict Colombo, Sri Lanka. *Geographies of forced eviction* \(pp. 47-69\). Palgrave Macmillan, London.](#)

The study drew on a large-scale survey of people evicted from their homes in informal settlements in the city of Colombo. People are forced to move to new purpose-built housing, which is offered to them as partial compensation for the move. The chapter argues that for this housing to be considered “adequate” the move must involve much greater consultation, the financial impacts of the moves

must be fully explored, and most significantly, the social context of the uprooted households must be better understood. The broader social network is vital for the successful redevelopment of a sense of community life, and this is where most evicted families are struggling.

[Redwood, M. and Wakely, P., 2012. Land tenure and upgrading informal settlements in Colombo, Sri Lanka. *International Journal of Urban Sustainable Development*, 4\(2\), 166-185.](#)

It is estimated that 35% of South Asia's urban population reside in slums. Solving the challenges that South Asian slums pose will mean revising how land is managed and adopting ways of supporting tenure security short of wholesale land reform. This research from Colombo, Sri Lanka reinforces the value placed on tenure security and the importance of functional land markets. Residents in low-income settlements understand clearly the implications of tenure for their future well-being. Existing laws, such as the Condominium Law of 2003, can be used to improve service provision in settlements, which is not currently happening. For development gains to be made in urban Sri Lanka, the government should continue to emphasize de facto property rights and avoid the expense of full titling programmes wherever possible. Longer term, a metropolitan authority that groups all five municipalities would help to facilitate revenue collection and land management.

[PREMAKUMARA, D. \(2012\). Land tenure issues and improvement of housing in underserved settlements in Colombo, Sri Lanka. *Book Review* 77](#)

This paper argues the importance of security of tenure to land for the reduction of urban poverty and achieving inclusive development in the city of Colombo. Land tenure is a critical factor in providing municipal services, mobilising resources for improving houses and neighbourhoods, and giving significant social and financial security for the urban poor in Under-served Settlements (USS) in Colombo. However, security of tenure does not only mean a freehold title to full ownership. There are many forms of tenure to urban land and property, both formal and informal, that are equally secure. Unfortunately, the response of many authorities in Colombo has been to act without understanding this complexity. They do not resolve the problems of enabling people to obtain access to secure land in which they can build their houses and improve their communities. This paper, therefore, aims to examine the land tenure and poverty issues in Colombo, based on the incremental tenure approach. It reviews the current legislation and procedures for granting security of land tenure and housing in USS in Colombo. Presenting a case study of Swarna Road Settlement in Colombo, it discusses further how the incremental land tenure approach can encourage people to invest in improving housing and also enable them to access public services. Finally, it concludes by arguing that land tenure is not only a freehold title. It also has a range of tenure options to improve the security of tenure for those in USS in Colombo, by reducing their fear of eviction. It further recognizes the importance of the role of Community Development Councils (CDCs) and the local Non-Governmental Organizations (NGOs) in mobilizing the urban poor in Colombo to secure their land tenure, where powerful authorities have strong commercial interests in the development of public lands. In addition, it argues that policymakers and planners must review regulatory frameworks and remove or relax constraints on access to affordable land and housing.

[Blitz, Brad K., Lynch, M., Lakshman, R., & Chrimes, S.B. \(2011\). The cost of statelessness: A livelihood analysis.](#)

This is the final report of findings is an assessment of the project from 1 August 2010 to 31 August 2011. It focuses primarily on the results of a livelihoods survey carried out in Bangladesh (300), Kenya (300), Slovenia (80), and Sri Lanka (300), further in-depth interviews (10-15 in each country), and a gap and gender parity analysis which was also included in both the survey and interviews. The

underlying rationale for conducting this study was that until now, the vast majority of writing on statelessness and related issues has taken the form of descriptive reports and legal analysis. There are precious few comparative studies, and none which begins to quantify how statelessness harms individuals and households. Nor have there been studies about what it costs in terms of lost opportunities. This project gathered and analysed quantitative and qualitative data to compare the livelihoods of stateless persons and citizens in Bangladesh, Kenya, Slovenia, and Sri Lanka. The research teams surveyed approximately 300 individuals and conducted in-depth interviews with 15 households in each country. The study employed a sustainable livelihoods approach to analyse empirical survey data on: human capital (e.g., education, skills, health), social networks, access to land and other natural resources, physical capital (e.g., shelter, transportation, sanitation, jewellery) and financial capital (e.g., income, savings). The study also examined the effects of statelessness on freedom of religion, security, community and political participation, as well as gender parity.

[Perera, T. G. U. P. \(2010\). Implementing land registration systems in Sri Lanka, being pragmatic. *Sri Lanka Journal of Real Estate*, \(4\).](#)

Land registration systems that define and identify the land rights, making it commercially and financially visible to the market, are one key to the development of the country. However, in developing countries, the administrative framework for the registration of lands seems to be inefficient and ineffective in coping with the dynamics of the land markets. In Sri Lanka too as per the issues that can be experienced with regard to land tenure, it could be presumed that the land registration system has not been effective in dealing with the development requirements of the country. Accordingly, this study investigates and evaluates the land registration systems in Sri Lanka and has attempted to propose certain strategies in order to improve its effective implementation. In this regard, one of the strongest claims made by the study is that the land registration system should enforce pragmatic decisions and strategies rather than relying on too standardized, bureaucratic, and costly approaches.

[Wakely, P. \(2008\). Land tenure in under-served settlements in Colombo. IDRC Urban Poverty and Environment Report Series, 6.](#)

Secure tenure to land is now internationally recognised as central to the reduction of urban poverty and the development of cities. Security of tenure does not only mean freehold title to full ownership. There are many forms of tenure to urban land and property, both formal and informal, that are equally secure. Only with an acceptable level of security will households invest their resources in developing their dwellings and managing their neighbourhood infrastructure. There are strong arguments and extensive evidence to show that providing secure tenure to land releases household savings (“dead capital”), enabling it to be invested in urban development. Not only does recognised title to land provide collateral for credit, it also secures a capital asset that can be sold in times of crisis. It is a major contributor to poor people’s struggle out of poverty.

[Velez-Guerra, A. \(2005\). Land tenure and the urban poor's environmental burdens: a case study of four settlements in Colombo, Sri Lanka.](#)

Urban poverty is different from rural poverty since poor urban households may have higher incomes than their rural counterparts, yet their unstable, informally earned incomes hardly cover the higher urban prices of food, transportation, health and education. As a result, they live in underserved, overcrowded and insecure housing conditions and face discrimination and spatial segregation. On the other hand, rural poverty is not caused by a lack of income but by a lack of access to sufficient land on which to grow crops and raise livestock, and/or a lack of access to other non-cash assets

(Satterthwaite, 2002). Urban livelihoods depend far more on income-earning opportunities from non-agricultural activities and far less on entitlements to natural resources. Urban poverty is multidimensional and comprises six different and interrelated sets of deprivation: inadequate or unstable income, inadequate or unstable assets base, limited political and legal rights, poor quality housing and insecure land tenure, lack of basic services, and discrimination.

[UN-Habitat. \(2003\). The Challenge of Slums - Global Report on Human Settlements. Retrieved April 1, 2022 \(https://unhabitat.org/the-challenge-of-slums-global-report-on-human-settlements-2003\).](https://unhabitat.org/the-challenge-of-slums-global-report-on-human-settlements-2003)

The Challenge of Slums presents the first global assessment of slums, emphasizing their problems and prospects. It presents estimates of the numbers of urban slum dwellers and examines the factors that underlie the formation of slums, as well as their social, spatial, and economic characteristics and dynamics. It also evaluates the principal policy responses to the slum challenge of the last few decades. The report argues that the number of slum dwellers is growing and will continue to increase unless there is serious and concerted action by all relevant stakeholders. The report points the way forward and identifies the most promising approaches to achieving the Millennium Declaration target on improving the lives of slum dwellers.

[Russell, S., & Vidler, E. \(2000\). The rise and fall of government - community partnerships for urban development: Grassroots testimony from Colombo. *Environment and Urbanization* 12\(1\), 73–86. doi: 10.1177/095624780001200106.](https://doi.org/10.1177/095624780001200106)

This paper presents evaluations of government policies by poor residents of Colombo who were active participants in initiatives to improve housing and basic services. Their testimony tells of the radical break from conventional, top-down approaches within the government's Million Houses Programme during the late 1980s and early 1990s. Community development councils and a participatory methodology known as community action planning meant that residents and community leaders worked with government officers to identify problems, set priorities, and develop solutions. But it proved difficult to sustain these in the face of widespread poverty, entrenched government institutions, and power structures antagonistic to community participation. The grassroots testimony also tells of the difficulties of preventing NGOs from controlling the initiatives and politicians from undermining them. The participatory approaches were abandoned when the government changed in the mid-1990s.

[Bhanjee, T. N. \(2000\). Upgrading an informal settlement : the role of tenure security in Mahaiyawa, Kandy, Sri Lanka \(T\). University of British Columbia. Retrieved from https://open.library.ubc.ca/collections/ubctheses/831/items/1.0089501](https://open.library.ubc.ca/collections/ubctheses/831/items/1.0089501)

The urban poor in many developing countries live in informal settlements which are becoming more congested due to increasing population and urbanization. The infrastructure services and housing in these informal settlements are rapidly deteriorating and seriously affecting the health and well-being of the inhabitants. Upgrading improves the living environment of these settlements. Tenure security is one, among many factors, that influence upgrading. A sense of security is necessary for the investment of time, resources, and money to occur in upgrading. Once a sense of security is established, several other factors that may be independent of tenure security, influence upgrading. This study determines the factors that affect physical upgrading (housing and infrastructure services) in the low-income settlement of Mahaiyawa, in Kandy, Sri Lanka. Mahaiyawa is the largest low-income settlement in Kandy, which is extremely congested and in dire need of upgrading. The impact of tenure security, as well as the other factors that influence upgrading, is examined. A comprehensive literature review regarding tenure security and upgrading was conducted prior to the three-month field

research. Through participant observation and a mapping exercise, the physical and social aspects of the settlement were assessed. The key methodology for the study was interviews. Questions for the interviews were based on the literature review and previous studies conducted in Mahaiyawa. Twenty-two key-informant interviews and eighteen community interviews were conducted. A questionnaire was used to cross-check the community interviews. Based on the analysis of the interviews, recommendations regarding upgrading were provided. The study revealed that upgrading was taking place through a self-help approach, regardless of legal tenure. The prevalence of unauthorized units suggested that perceived security was critical for upgrading. No evictions, provision of urban services and identification cards, employment security, and a sense of community established through a long residency, supported this sense of security. Access to financial resources dependent upon saving capacity, employment security and credit access, seemed to be the most critical factor affecting upgrading after a sense of security was established. Other factors such as ethnicity, community participation, skill levels, and availability of building materials, institutional resources, and power dynamics and politics, also affected upgrading.

[Office of the United Nations High Commissioner. n.d. The Right to Adequate Housing.](#)

International human rights law recognizes everyone's right to an adequate standard of living, including adequate housing. Despite the central place of this right within the global legal system, well over a billion people are not adequately housed. Millions around the world live in life- or health-threatening conditions, in overcrowded slums and informal settlements, or in other conditions which do not uphold their human rights and their dignity. Furthermore, millions are forcibly evicted, or threatened with forced eviction from their homes every year. Adequate housing was recognized as part of the right to an adequate standard of living in the 1948 Universal Declaration of Human Rights and in the 1966 International Covenant on Economic, Social and Cultural Rights. Other international human rights treaties have since recognized or referred to the right to adequate housing or some elements of it, such as the protection of one's home and privacy. The right to adequate housing is relevant to all States, as they have all ratified at least one international treaty referring to adequate housing and committed themselves to protecting the right to adequate housing through international declarations, plans of action, or conference outcome documents. Several constitutions protect the right to adequate housing or outline the State's general responsibility to ensure adequate housing and living conditions for all. Courts from various legal systems have also adjudicated cases related to its enjoyment, covering, for instance, forced evictions, tenant protection, discrimination in the housing sphere or access to basic housing-related services.

3) Systems of Provision Approach

[Bayliss, K., Mattioli, G., & Steinberger, J. \(2021\). Inequality, poverty and the privatization of essential services: A “systems of provision” study of water, energy and local buses in the UK. *Competition & Change*, 25\(3–4\), 478–500. <https://doi.org/10.1177/1024529420964933>](https://doi.org/10.1177/1024529420964933)

This paper is concerned with the distributional effects of the deregulation and privatization of essential services in Britain since the 1980s, based on a cross-sector study of water, energy, and local bus transport. Our approach locates end users within the structures and processes, and prevailing narratives that underpin both production and consumption. This framework highlights the ways that the provisioning of these vital services is contested, contradictory, and underpinned by power relations. We show that, at one end, investors in these sectors have made generous returns on their investments but their methods of profit maximization are often not in the public interest. Meanwhile, these profits are financed by end users’ payments of bills and fares. Many lower-income households face challenges in terms of affording, and even accessing, these essential services. Regulation has failed to provide adequate social protection. We argue that adverse social outcomes emerge from systemic factors embedded in these modes of provision. A narrative of politically neutral, technocratic solutions belies the underlying contested nature of privatized monopolistic shared essential services. Moreover, a policy preoccupation with markets and competition obscures the inequality embedded in the underlying structures and processes and undermines more collective and equitable forms of provisioning.

[Fine, B., & Bayliss, K. \(2021\). A guide to the systems of provision approach: Who gets what, how, and why.](#)

Understanding consumption requires looking at the systems by which goods and services are provided – not just how they are produced but the historically evolved structures, power relations, and cultures within which they are located. The Systems of Provision (SoP) approach provides an interdisciplinary framework for unpacking these complex issues. This book provides a comprehensive account of the SoP, setting out core concepts and theoretical origins alongside numerous case studies. The book combines fresh understandings of everyday consumption, using examples from food, housing, and water, with implications for society’s major challenges, including inequality, climate change, and prospects for capitalism. Readers do not require prior knowledge across the subject matter covered but the text remains significant for accomplished researchers and policymakers, especially those interested in the messy real-world realities underpinning who gets what, how, and why across public and private provision in global, national, and historical contexts.

[Bayliss, K., & Pollen, G. \(2021\). The power paradigm in practice: A critical review of developments in the Zambian electricity sector. *World Development*.](#)

Sub-Saharan Africa lags behind the rest of the world in electricity access and consumption. Infrastructure deficiencies are framed in terms of a “financing gap,” with policy oriented around attracting global private capital. Recent calls for increased private infrastructure investment follow three decades of market-oriented sector reforms. This paper explores the way that this standard policy paradigm has unfolded in Zambia. Drawing on the Systems of Provision approach, it focuses on three core interconnected segments of the electricity system: the performance of the state utility, Zesco; private sector participation and cost-recovery pricing. The paper shows that Zesco has run into major difficulties since 2015 due to a crisis in hydro resources and adverse currency movements. In line with the policy paradigm, the utility has signed up to a number of agreements with international

independent power producers (IPPs) to diversify power sources, and tariffs have been raised to improve Zesco's financial situation. However, closer inspection reveals contradictions, biases and inconsistencies in this standard policy package when applied in practice. Zesco's acutely debilitating financial position is a relatively recent occurrence. Short-term fluctuations in hydro power, for which intermittent back-up is needed, have instead been addressed with new decades-long contracts for fossil fuel generation. IPPs have provided generous returns for foreign investors but have created long-term, dollar-denominated liabilities for Zesco, contributing to a weakening financial position. Tariffs have been raised but households cannot afford to pay a price that covers Zesco's increased costs. The proliferation of IPPs appears to have worsened the situation. The paper shows that energy sector policies organised around the entry of private capital are problematic and likely to contribute to a dynamic of unequal global capital accumulation. Greater attention is needed to social equity, with policies oriented around domestic circumstances and the specific challenges faced.

[Mattioli, G., Roberts, C., Steinberger, J. K., & Brown, A. \(2020\). The political economy of car dependence: A systems of provision approach. *Energy Research & Social Science*, 66, 101486.](#)

Research on car dependence exposes the difficulty of moving away from a car-dominated, high-carbon transport system, but neglects the political-economic factors underpinning car-dependent societies. Yet these factors are key constraints to attempts to "decouple" human well-being from energy use and climate change emissions. This critical review paper identifies some of the main political-economic factors behind car dependence, drawing together research from several fields. Five key constituent elements of what we call the "car-dependent transport system" are identified: i) the automotive industry; ii) the provision of car infrastructure; iii) the political economy of urban sprawl; iv) the provision of public transport; and v) cultures of car consumption. Using the "systems of provision" approach within political economy, we locate the part played by each element within the key dynamic processes of the system as a whole. Such processes encompass industrial structure, political-economic relations, the built environment, and cultural feedback loops. The paper argues that linkages between these processes are crucial to maintaining car dependence and thus create carbon lock-in. Several important characteristics of car-dependent transport systems are discussed: the role of integrated socio-technical aspects of provision, the opportunistic use of contradictory economic arguments serving industrial agendas, the creation of an apolitical façade around pro-car decision-making, and the "capture" of the state within the car-dependent transport system. Through uncovering the constituents, processes, and characteristics of car-dependent transport systems, we show that moving past the automobile age will require an overt and historically aware political programme of research and action.

[de Feijter, F.J., van Vliet, B.J., & Chen, Y. \(2019\). Household inclusion in the governance of housing retrofitting: Analysing Chinese and Dutch systems of energy retrofit provision. *Energy Research & Social Science*.](#)

One of the most important governance challenges in terms of energy saving is the physical upgrading of apartment buildings via housing retrofitting. In urban studies, little focus has been applied to the shape and character of the retrofit governance frameworks to realise the inclusion of householders. Little is known about how these different frameworks, and the systems of provision they represent, impact on householders to achieve energy saving in their retrofitted houses. By recognising the importance of the relationship between provision and consumption, this study aims to analyse household inclusion in Chinese and Dutch systems of energy retrofit provision to suggest strategic improvements for intermediation. The empirical data is gathered in qualitative case studies of housing retrofitting in Amsterdam, Beijing and Mianyang (Sichuan province, China) by interviewing local retrofit providers, combined with site observations and reviews of policy documents. This paper shows

how the formation of sustainable retrofit practices is co-constituted in shifting constellations of retrofit governance along the public-private-community divide. Public and private modes of housing retrofit provision seem to converge in Beijing, Mianyang and Amsterdam. The findings point to how regulations, processes, and technical infrastructures should be adjusted to realise sustainable retrofit practices. The paper concludes that energy housing retrofitting in both Chinese and Dutch contexts requires co-management among householders and social intermediaries.

[Fine, B., Bayliss, K., & Robertson, M. \(2018\). The systems of provision approach to understanding consumption. *The SAGE handbook of consumer culture*, 27-42.](#)

The question of consumption emerged as a major focus of research and scholarship in the 1990s but the breadth and diversity of consumer culture has not been fully enough explored. The meanings of consumption, particularly in relation to lifestyle and identity, are of great importance to academic areas including business studies, sociology, cultural and media studies, psychology, geography and politics.

[Fusheini, A., & Eyles, J. \(2016\). Achieving universal health coverage in South Africa through a district health system approach: conflicting ideologies of health care provision. *BMC Health Services Research*, 16\(1\), 1-11.](#)

Universal Health Coverage (UHC) has emerged as a major goal for healthcare delivery in the post-2015 development agenda. It is viewed as a solution to healthcare needs in low and middle-income countries with growing enthusiasm at both national and global levels. Throughout the world, however, the paths of countries to UHC have differed. South Africa is currently reforming its health system with UHC by developing a national health insurance (NHI) programme. This will be practically achieved through a decentralized approach – the district health system – the main vehicle for delivering services since democracy. We utilize a review of relevant documents, conducted between September 2014 and December 2015 of district health systems (DHS) and UHC and their ideological underpinnings, to explore the opportunities and challenges of the district health system in achieving UHC in South Africa.

Review of data from the NHI pilot districts suggests that as South Africa embarks on reforms toward UHC, there is a need for minimal universal coverage and emphasis on district particularity and positive discrimination so as to bridge health inequities. The disparities across districts in relation to health profiles/demographics, health delivery performance, management of health institutions or district management capacity, income levels/socio-economic status and social determinants of health, compliance with quality standards, and above all the burden of disease, can only be minimized through positive discrimination by paying more attention to underserved and disadvantaged communities.

[Brooks, A. \(2015\). Systems of provision: Fast fashion and jeans. *Geoforum* 63, 36–39. doi: 10.1016/j.geoforum.2015.05.018.](#)

Using the example of jeans and the fast fashion sector, this critical review explores how systems of provision analysis can be used to understand geographical connections between spaces of production and places of consumption. The study of global commodity chains and production networks has proliferated in economic geography, yet the focus on transactions between places frequently omits to consider the material culture that surrounds processes of making and buying. In contrast, in cultural geography, the meanings and transformations associated with “following things” has explored the shifting meanings of commodities as well as personal experiences of shopping with a focus on signifying culture. Ben Fine’s systems of provision approach can offer a more comprehensive analysis. Fine considers how the role of the consumer has emerged as well as the economic processes through

which value is established in goods and is an inclusive way of examining the activities that connect consumption and production. Through discussing some of the recent and emerging work on denim jeans, this review shows how a systems of provision approach can effectively map a “fast fashion” system and provides a framework that can be applied to other economic geographies.

[Bayliss, K., Fine, B., & Robertson, M. \(2013\). From financialisation to consumption: The systems of provision approach applied to housing and water.](#)

This paper presents an introduction to the concept of Systems of Provision (SoP) and illustrates some of the core themes by applying the sop framework to the study of the financialisation of housing and water. The sop approach considers consumption to be part of a chain of activity interlinked with production processes. By adopting a vertical analytical structure, the study of consumption (and the consumer) is attached to distinct, and distinctly structured, systems that are commodity-specific. Each sop needs to be addressed by reference to the material and cultural specificities that bring together production, distribution, access, and the nature and influence of the conditions under which these occur. Consumption patterns emerge from a complex web of structures, agents, processes and relations and are specific in time and location. Originally developed to address private commodity consumption, the sop approach is widened in this paper to address the delivery of essential services, in which the state often plays a significant role. The paper shows that the role and impact of finance and financialization within these sectors can only be understood by locating these within the integrated chains of activity. The resulting analysis provides a rich and complex understanding of consumption, which is anchored in reality, thereby creating a more useful and appropriate basis for policy than other approaches, whilst critically synthesizing from them.

[Fine, B. \(2013\). Consumption Matters. *Ephemera Journal* 13\(2\).](#)

This article is a response to a request both to explain the researcher’s approach to consumption and how it came about. He does so by first indicating the origins of the system of provision (SoP), approach to consumption and, then, its attachment to cultural systems. This is followed by examining some debates around the SoP approach and concludes by seeking to bring out some implications for the nature of consumer politics.

[Saad-Filho, A. \(2000\). “Vertical” versus “horizontal” economics: Systems of provision, consumption norms and labour market structures – An extended book review by Alfredo Saad-Filho. *Capital & Class*, 24\(3\), 209.](#)

Ben Fine is well known in Marxian and radical cadres for his research, his teaching at Birkbeck College and SOAS, and his involvement with the CSE. A superficial look at Fine's publications gives the impression that his intellectual trajectory is badly fragmented. Fine seems to have abandoned his highly acclaimed (by Marxists) work on value theory in the mid-80s (especially Fine and Harris, 1979, and Fine 1980, 1982, 1986; see, however, Fine, 1989 (1st ed. 1975), 1990a, 1992a), in order to pursue a disparate collection of “softer” themes such as the South African industrialisation (Fine and Rustomjee, 1997), the contemporary British economy (Fine and Harris, 1985), the history of the British coal industry (Fine, 1990b), female participation in the labour market (Fine, 1992b), and labour market theory and the political economy of food and consumption.